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14. ABSTRACT

The overall objective of this study was to determine factors associated with sustaining regular participation in free prostate cancer screening clinics, particularly among African American men. Intervention strategies were designed and used at the community level by nurses in free screening clinics to improve screening sustainability. Strategies used in this study show that African American participation can be increased significantly. Men will respond to tailored messages. African American men who should be targeted for mass screening programs are those from lower educational attainment (less than high school and high school); African American men at age 40 and older who have never been screened; men who present for screening in their 40's and 50's but who decrease screening as they age; and African American men who present for an initial screening with no follow up screening in subsequent years. The challenge remains to sustain high participation in the free prostate cancer screening from one year to the next, and over several years. Churches can be a source of prostate cancer screening promotion once the church leaders identify men's health as a priority. The study sample contained 1,882 individuals primarily of African American and Caucasian ethnicity. Sustainability was at 40% for Blacks and 46% for Whites. Recruitment efforts in this study continued to be in the risk and age-related screening range that is supported by national health care organizations. We increased participation by African American men, and the majority of participants fell primarily in their 50's and the next larger group in their 40's. Consistency from one year to the next in scheduling free clinics and in developing marketing materials is important.

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INTRODUCTION

This is the final report (May 2002 – May 2006) for Award DAMD17-02-1-0235. The report starts with an introduction with a background overview of the significance of this research. Details of each year's aims, methods, and accomplishment of statement of work follow. Prostate cancer is the most frequently occurring cancer among men, and is the second leading cause of cancer deaths among African American men. This study was conducted to determine factors associated with sustaining regular participation in free prostate cancer screening clinics, especially among African American men. The study setting is in Durham, North Carolina where African Americans make up approximately 44% of the population. This study evolved from a free prostate cancer screening day, which has been sponsored annually for 14 years at Duke University Medical Center (DUMC), Durham, North Carolina. The free screening clinics are offered once a year at two sites to men 40 years and older, regardless of racial background or ability to pay. Current statistics show the incidence rate for prostate cancer for Durham's African American males was twice that for White men in Durham (60/100,000 versus 31/100,000). Even more concerning is that the death rate for White men in Durham for prostate cancer is 27.1/100,000 and three times higher for African American men at 71.1/100,000. This is alarmingly higher than for African American men in North Carolina, 62 deaths per 100,000 men (N.C. Center for Health and Environmental Statistics, 2006).

Body

The study was approved by the U.S. Department of Defense and Duke University IRB. The study objectives were to (1) to identify facilitators and barriers to regular adherence to prostate cancer screening among African American men in Durham, N.C. (2) to determine barriers and facilitators that sustain screening, and (3) define strategies that will encourage consistency in participation of lower-income African American men in prostate cancer screening clinics in an urban community.

In Year 1, a longitudinal database of the total population of men ever screened at the free clinics since 1998 was updated. From the total, a subset of participants who had not return for subsequent screening up to 2002 was determined. For this study, these non-returning screenees are defined as *nonsustainers*. Next, focus groups were conducted among community leaders (African American physicians and African American church pastors) to uncover attitudes about prostate cancer screening. In year three, the third study objective defined a set of intervention strategies to encourage regular screening. Finally, we examined facilitators and barriers to mass prostate screening participation and determined nonsustainers and sustainers for the full term of the study. Multiple factors for ever having participated were compared to factors that could sustain regular annual screening. In the end, we defined a set of facilitators and barriers to free community-based screening for these men. The facilitators and barriers were used to develop strategies that encourage consistency in screening participation of African American men compared to a general population of mass screeners. A risk profile was developed to determine which men are less likely to return to free annual prostate cancer screening clinics.

Conceptual Framework**:** The conceptual framework for this study was based on the Health Belief Model (HBM). The HBM (Rosenstock, 1988), is one of the most widely recognized conceptual frameworks of health behavior. It assumes that individuals fear the threat of a health problem. Motivation and confidence to activate readiness for action are based on one's perception of the degree of the perceived threat. However, perceived barriers and benefits mediate those actions.

Identifying barriers is a key concept in the Health Belief Model. For prostate cancer screening, the likelihood of going for regular prostate cancer screening is determined by each man's understanding of the condition and its sequelae, his perceived susceptibility, and benefits minus his perceived barriers. Tingen and Weinrich's research (1998) identified barriers for participation in free prostate cancer screening. These included embarrassment, sexual difficulty as a complication of surgery, mistrust, cost, concern about abnormal test results or cancer, lack of knowledge, not having a regular doctor, lack of cultural sensitivity of programs, and fatalism. Concern about the discomfort of the exam and lack of transportation were not found to affect participation. Predictors found by Tingen and Weinrich for participating in free prostate cancer screening were perceived benefits, being White, having at least a high school education, being married, and receiving educational intervention. This study sought to uncover factors in the study population, particularly among African American men, that influence acceptance of regular screening.

In our study, reasons for non-participation from one year to the next were investigated. A limited number of other studies have examined other aspects of prostate cancer screening. Surveys and questionnaires were used in those studies primarily with African American men in clinical and community settings to learn about their intention to engage in prostate cancer screening and their attitudes and knowledge about prostate cancer as a predictor to seek timely screening (Abbot, Taylor, & Barber, 1998; Robinson, Tingen, Weinrich, 1998; Collins, 1997; Weinrich, Boyd, & Weinrich, 1997; Ashley & Haynes, 1996; Demark-Wahnefried**,** et al., 1995; Gelfand, Parzuchowski, Cort, & Powell, 1995; and Millon-Underwood, 1992)**.** Previously, there was no known evidence in the literature for determinants of regular, sustained screening.

Hypothesis/Rationale/Purpose for this study: The hypothesis for this study is that profiles can be determined that will predict which men are likely to be consistent in annual prostate cancer screening. Those profiles can lead to appropriate culturally sensitive strategies to encourage African American men to participate in free screening clinics. Men included in this study volunteered for free screening during years 1998 –2004. A secondary objective of the study was to increase study participation of low-income minority men. This group of participants were targeted through recruitment of subjects through health centers that tend to serve more low income patients.

STATEMENT OF WORK

Specific Aim #1: To identify facilitators and barriers to PSA and DRE prostate cancer screening among African American men in Durham, N.C.

Hypothesis: Community leaders – physicians and pastors – have attitudes and concerns about prostate cancer screening that may be shared by other African American men, and affect how they make informed decisions about screening.

Task 1. A plan will be developed to recruit participants for two focus groups of community leaders

Task 1a. African American physicians and African American church pastors will be recruited for two separate focus groups: physicians and church pastors.

Task 1b: The focus groups will be conducted, transcribed, and analyzed.

Although scientific literature frequently cites the controversy about physicians' recommendation for prostate cancer screening, the literature is void of focus groups having been used to explore the concerns and attitudes of physicians on this subject. The recruitment goal was met with a total of 22 African American physicians. There were 12 female physicians and 10 male physicians in the focus group. The physicians were recruited from the membership of an African American medical professional organization. The focus group setting was a dinner meeting at a hotel/restaurant. The one-hour focus group was conducted following dinner. A professional focus group moderator experienced with conducting focus groups on men's health and prostate cancer topics conducted the group. Consent was obtained consistent with Duke University Medical Center IRB guidelines. See Physicians Consent Form, Appendix A.

The physicians focus group was used to explore concerns, attitudes, and practices among African American physicians about prostate cancer and prostate cancer screening that may serve as barriers to recommending screening for African American male patients in their care. Analyses of physicians' focus group was done. Major themes emerged from the discussions: facilitators to screening; healthcare not being a top priority for the African American male; decreased use of health care among males in genera, but particularly among African Amerian males; diagnosis and treatment uncertainty, mistrust of the health care system among many African Amerian males, need for successful health marketing to male consumers, fear of impotence if prostate cancer is diagnosed and surgery is the best option, lack of advocacy for prostate cancer research as has been seen with females and breast cancer research; and, poor understanding of the role of nutrition and prostate cancer. Major themes from the physician's focus groups were incorporated in the questionnaire that was later mailed to nonsustainers.

Each theme will be described in detail:

Facilitators to screening. In the beginning of the group discussion, facilitators to screening were volunteered. Physicians expressed that third party payment has made it affordable for men with health insurance coverage, whether private insurance or Medicare, to obtain prostate cancer screening. Prostate cancer, along with high blood pressure was acknowledged as silent killers among African American men. Several, but not a majority of the physicians, ascribed to offering

screening, often when the patient inquired about it, and more often if a patient mentioned having a first degree relative (father or sibling) who had experienced or succumbed to prostate cancer. The group as a whole stated that there are separate guidelines that must be used for this population (i.e. African American men). They recommend screening at an earlier age for the African American male, starting between ages 40 and 45.

Diagnosis and treatment uncertainty. Physicians felt that there is inadequate research on the efficacy of testing for prostate cancer and African American males, adding that the 'gray areas' in the cut-off point for the prostate specific antigen test (PSA) which is a test for prostate cancer, may not be the best cut-off for African American men, i.e. that the PSA might need to be at a lower cutoff for African men.

Male decreased use of health care. This group of physicians pointed out the difference in screening behaviors among males versus females. Females, they said, are introduced into the gender specific health care system at least by the age of 18, if not earlier. Boys rarely see physicians by that age unless they are active in sports and need a 'sports physical' to play a sport.

Need for ways to market health to male consumers. While women are expected to seek out routine and annual wellness checkups, they saw a need to find successful ways to market and promote routine health check ups for African American men who are in good health. An example was given, "African American men aged 35 aren't getting heath care unless it is in the prison health care system."

Health not being a priority for the African American male. The physicians as a group unanimously felt that health is not a priority for African American men unless they are experiencing a persistent problem. Ignorance and a feeling of invincibility prevent young men from addressing their health issues seriously and gaining knowledge about health. The overriding subjective self-concept and evaluation of one's own male health is 'do I feel fine'? This was agreed among several male physicians in the group. It isn't just poor African American men who don't get proper diagnosis for prostate cancer; it's it true for many African American men in middle and higher income levels. Socialization greatly influences the health-seeking behavior of African American men. Men are often brought up with the male macho persona and are viewed as being weak when they express pain. Overall, a majority of the physicians expressed the importance of getting African American men ages 30-40 to have a full checkup. Quoting the physicians: "Once you get these men in, you can do a lot of things, screen them for hypertension, for cholesterol, and mention the prostate as well". Ignorance and a feeling of invincibility prevent young men from addressing their health issues seriously and gaining knowledge about health. These physicians saw the concept of health as a complex issue beyond knowledge and discipline. This notion was expounded by one and agreed by a majority, 'saying you want to be healthy and living a healthy lifestyle are two completely different things. African American men generally are not living healthy lifestyles. Part of this is due to lack of knowledge. They pointed out that even medical professionals like themselves don't eat the way they know they should, indicating that knowledge is not the only factor in making positive health care decisions and choices. It was pointed out that positive choices for health promotion are not available for many African American men and their families, the community and environment that one lives in and cultural influences are part of the complex issue of health for African American males. Access to healthful foods such

as fresh fruits and vegetables was pointed out as a barrier to good health in general for the African American in low socioeconomic levels.

Fear of impotence if prostate cancer is diagnosed and surgery is the recommended treatment option. Several physicians in the group felt that African American men, as an underserved population, have several issues that need to be addressed aside from age that make administering screening and treatment difficult. The digital rectal examination (DRE) is not looked upon favorably due to sexual taboo associated with an individual of the same sex, though a medical professional, performing a rectal examination. After having the exam, concern and confusion regarding treatment recommendations presents an additional barrier. Perceived discomfort is associated with prostate cancer treatment.

Several physicians agreed that if one gets screened and is found to have cancer, then it places the male in a difficult predicament to start treatment that often leads to impotence and often does not provide a cure for the African American male. These male physicians unanimously agreed upon the importance of successful sexual performance with one stating that 'Impotence for Black men is not an option.' A physician gave a poignant recall of a case where he operated on a professional colleague for prostate cancer. The patient experienced sexual dysfunction as a result of the surgery. With tears, he described how the man has held a grudge against him for 30 years because he performed the eventful surgery. Further, a fear of incontinence and wearing diapers as a consequence of surgery was voiced. A statement by a male physician that lead to loud discussion in agreement for many in this group of physicians was that the practice of medicine will always be a learning process, a continuous experiment, with nothing (including diagnosis and treatment) being 100%. The public is falsely led to believe that medicine is a "sure fix". Because medicine is not guaranteed, uncertainty in selecting the best treatment option is an additional barrier. Conflicting views and uncertainty regarding the treatment of prostate cancer along with pre-existing fear and apprehension of the health system makes it difficult to treat African American men.

Male mistrust of the health care system. Mistrust of health professionals is deeply ingrained in the African American community due to issues of mistreatment or withheld treatment in past research. The uncertainty and fear, especially for men in the 35 to 40-year-old range, drives them to wait until the worst happens before they seek health care for what appears to be a prostate problem. A few younger male physicians who appeared to be in their 30's concurred on a feeling that young black men believe that nothing good is going to come from getting screened for prostate cancer.

Lack of advocacy for prostate cancer research as has been seen with females and breast cancer research. A final barrier to adequate public awareness for prostate cancer screening is a lack of advocacy for research dollars and public support. They pointed out that there are controversies in breast cancer diagnosis and treatment, but that there is more broad based local, state, and federal political advocacy behind it; it was cited that there are few foundations promoting prostate cancer awareness on a large scale where the average person can tell you the name of a foundation specifically for prostate cancer awareness.

Poor understanding of the role of nutrition and prostate cancer. The focus group discussion ended with several physicians raising questions about a need for them to know more about the role of nutrition (dietary intake) and herbals in prostate cancer prevention, especially diets in lower fat content, and herbals such as vitamin E, Selenium, and Lycopene. Overall, the physicians felt that prostate cancer is such a multi-factorial disease that many major factors with the disease and African Americans is not known. They voiced that the discussion had been extremely valuable and that more dialogue needs to go on in their physician only groups on matters of health with high incidence of morbidity and mortality. That, as leaders, husbands and fathers, they have a certain responsibility to stay healthy themselves.

The physician focus group discussion provided an understanding about the role that a physician's message might play in their male patient's decisions about prostate cancer screening test seeking.

Pastor's focus group: See the Pastor's Consent Form, Appendix B.

Scientific literature has indicated the role of churches and ministers in guiding parishioners to health promotion and disease detection programs. Much of these observations have been made with female churchgoers. It has not been documented if pastors offer similar encouragement to male church members. There were 3 female pastors and 21 male pastors (a total of 24), all African Americans pasturing a cross-section of African American churches who volunteered for the focus group. Consent was obtained consistent with Duke University Medical Center IRB guidelines. The focus group setting was a luncheon meeting held at a church, followed by the one-hour focus group following lunch. A professional focus group moderator who is experienced with conducting focus groups on men's health and prostate cancer topics conducted the group.

Analysis of pastor's focus group: Analysis was conducted in the same manner as for the physicians' group. Concerns about screening nor barriers to screening were ascertained in this group. One overall theme came out of this focus group. Half of the ministers spoke regretfully of not having used their role of congregational leadership proactively on men's health issues. Others discussed possibile ways to increase their leadership to promote men's health from the pulpit in their churches. A few stressed that in the least, the male pastors in the group could take on the responsibility of talking one-to-one among men about the importance of getting prostate cancer screening. They described activities centered under the health mission in their churches. Frequency of health promotion varied with primary care health issues of diabetes and hypertension being most frequently, followed by breast cancer awareness. Health promotion in the churches consisted of flyers to promote community activities, actual blood pressure and diabetes checks on site, and an annual health affair event in a few of the churches. All of the churches represented distributed the 'Health Sunday' info. This is a health letter distributed by an African American coalition monthly. Each letter focuses on one particular disease that is a major concern for African Americans. For example, in September, the letter will focus on African American men and prostate cancer. Half of the ministers voiced that they had announced dates for the annual prostate cancer screening to their congregations. There was unanimous agreement that more needs to be done in the church for health promotion directly to their male parishioners.

Among participants in the focus groups, no facilitating factors emerged that can promote prostate cancer screening. Pastors in this group do not take a major and proactive role with men

in their congregations for decision-making about prostate cancer screening test seeking. At the end of the focus group, pastors were offered the availability of an information session in his or her church on prostate cancer screening and detection. Several expressed receptivity, and verbally consented to the principal investigator contacting them to schedule information sessions later in the year. Over the course of the study, contact was made with the church pastors to offer education sessions. Prostate cancer education through the churches ended up being the most challenging goal of the study. Those sessions were conducted by a male consultant at the respective church with a mini-lecture and videotape about prostate cancer and prostate cancer screening. The mini-lectures were followed by question/answer discussion. Sessions, although a challenge to get commitment from pastors, were exceedingly well received. There was feedback from the participant in every session that they valued the information, and session attendees were informed of September prostate cancer screening dates. The PI reviewed literature on the role of the church and advocacy in prostate cancer screening. The draft manuscript, Church Based Promotion of Prostate Cancer Screening: A Review of the Literature found that from 15 articles in scientific literature, even though the church is considered a vital center for information sharing in the African American community, recruiting study participation through such churches can be difficult. The closed community dynamic in the African American church presents several barriers to the integration of outside health programs. The pastors and leaders of the church must be supportive and deeply involved with the promotion of cancer awareness and the educational program. Having contacts within the church and establishing relationships with key leaders of the congregation helps one to overcome some of the barriers. See Church Based Promotion of Prostate Cancer Screening: A Review of the Literature, Appendix C.

Task 2. Market annual free prostate cancer screening clinics.
Task 2a. Plan with community agencies that serve low-income residents to conduct mail campaign to market free screening clinics.

To increase the pool of lower-income African American men in the longitudinal database for study cohort, over sampling was done by targeted recruitment aimed at African American men. Over sampling through community providers of health care was used to target study recruitment of African American men across study years 2002-2005. The principal investigator met individually with program directors at three programs that primarily African American serve low-income individuals and families. Each health agency identified a confidential mailing list of patients who received health care in the 12 months preceding the annual free screening clinics. The PI worked with the respective health care programs to frame one culturally sensitive flyer for all of the mailings. The flyers were mailed from the respective program to their patients by direct mailing to their home addresses. See Screening Announcement Flyer, Appendix D.

In study year 1, Promising Practices Home Care Program, Lincoln Community Health Center, and Central Family Medicine, a private family practice office located in the African American community, sent mailings to their patients to inform them of the screening clinics. Promising Practices targeted 200 families with screening announcements that received their primary care though home visits in the 12 months preceding the study. Approximately 70% of Promising Practices patients were older, African American females diagnosed with chronic diseases. They reside in five low-income zip codes of Durham. Female and male patients received a mailed flyer to inform adult males in their families of the free screening clinics.

Lincoln Community Health Center is the major source of health care for low-income residents of Durham, and provides care to thousands of patients each year. In study year 1, Lincoln mailed flyers to the first 1,280 names on the alphabetical listing of male patients 40 years and over (Lincoln's actual list of male patients 40 years and over exceeded 5,000 patients who had received health care in the preceding 12 months). In addition, the principal investigator mailed 167 flyers to screening participants who attended Lincoln Health Center's free screening day offered in September 2001. In subsequent years 2004 (final year) and 2005 (one year post study), Lincoln Health Center mailed 2,000 flyers announcing the screening to male patients ages 40 and over.

Central Family Medicine is a private practice located in a low-income zip code area of Durham. They serve a large number of lower income Medicaid and Medicare covered individuals and families. The PI guided clinic personnel in following the study inclusion criteria to identify men 40 years and over. In 2002, the staff mailed 70 flyers to announce the free clinic to their patients. In subsequent study years clinic staff distributed flyers in their clinic waiting room.

Task 3. Plan and conduct information sessions about prostate cancer screening and detection in churches.
3a, b, c. From among African American pastors who participated in the focus groups, information sessions were offered to their male parishioners across study years. Pastors who participated in a focus group in Year 1 were contacted across study years. Leads were made to other community church pastors and faith based organizations. Five of a planned 10 sessions were conducted. There were a total of 105 male participants across sessions. Information about the disease was presented, along with screening and detection guidelines. Discussion was frank and open among participants to reach personal clarity about the disease, and address barriers to regular screening. Participants provided feedback on the type messages that would promote their taking action for health screening, particularly prostate cancer screening. These participants were invited to the next free prostate cancer screening clinics.

Specific Aim # 2: To determine independent factors (barriers and facilitators) that sustain screening from one year to the next year.

Hypothesis: There are individual demographic characteristics and barriers and facilitators associated with participation of African American men in a free mass prostate cancer screening. Selected demographic items were used in the longitudinal screening database. The demographic items came from a questionnaire used by Duke University Department of Urology in their annual September free mass prostate cancer screening clinics. The commercial questionnaire was published by the *American Urologic Association*.

Task 2b. A questionnaire was designed to determine barriers and facilitators to sustained screening. See Questionnaire, Appendix E.

The questionnaire was designed as a computer scannable document and pilot tested. A cross-section of 10 men ages 40 and over, in varied occupations, were recruited form the Duke University workplace to complete the pretest of this questionnaire. The pretesters were men why had never participated in the annual free screening clinic. The questionnaire was pilot tested for

user-friendliness in flow and ease in self-administration. The pretest questionnaire was reviewed for readability at an 8th grade reading level, using Microsoft Work computerized functions.

The final questionnaire included a set of identifiable barriers and facilitators that could influence a participant's attendance at free prostate cancer clinics. Participants were asked to indicate by penciling a *bubble* for any of the items listed on the questionnaire that would make it difficult for them to participate in free prostate cancer screening. Selected items in the questionnaire were informed by the physician's focus group, and by scale items from the Weinrich Barrier Scale (1999). Questionnaire responses from screening participants who returned a subsequent year were compared to responses of non-sustainers. A limited number of studies have examined various aspects of prostate cancer screening. Discussions of prostate cancer screening participation by African American men has been explored by other researchers (Abbot, Taylor, & Barber, 1998; Robinson, Tingen, Weinrich, 1998; Collins, 1997; Weinrich, Boyd, & Weinrich, 1997; Ashley & Haynes, 1996; Demark-Wahnefried**,** et al., 1995; Gelfand, Parzuchowski, Cort, & Powell, 1995; and Millon-Underwood, 1992)**.** Among these studies, questionnaires were used primarily with African American men in community settings to learn about their intention to engage in prostate cancer screening and their attitudes and knowledge about prostate cancer as a predictor to seek timely screening.

Task 2c. Volunteer participants were recruited to complete questionnaires during annual free screening clinics.

The goal for this study was to reach a sample size of 614 participants to give us at least 307 sustainers and 307 nonsustainers to provide adequate statistical power of 80% to detect at least a two-fold difference in sustainers and nonsustainers at a 95% confidence level. Recruitment strategies were successful. Across the three study years 1,882 unduplicated individuals consented to the study and completed questionnaires. We were able to determine the percent of sustainers among those participants.

Task 3. Plan and conduct information sessions about prostate cancer screening and detection in churches. These sessions are further described under Specific Aim #1. From pastors who participated in the focus group, information session discussions were offered to their male parishioners. These sessions facilitated development of culturally sensitive recruitment messages to publicize the annual free screening clinics.

Task 4. Participants who did not return for screening in a subsequent year were selected for the mailed questionnaire. Follow-up postcards were mailed in four weeks, and questionnaires from participants were returned by U.S. mail. In addition, in study year 1, a subset of 26 participants was recruited to discuss decisions about their screening participation in a telephone interview format, see Appendix E. These participants were not mailed a questionnaire. This interview captured more in-depth exploration of the items on the screening tool. Participants for the telephone interviews were randomly selected from among screening participants who attended the free clinics between 1998 and 2001, but who never returned for screening again. From 210 African American nonsustainers, 26 were reached. They were equally distributed between the 40-50, 51-60, and 61-70 age groups, and two were in the 71-80 age group. Median age was 57 years. See the Verbal Consent For Telephone Interview, Appendix F. Among men who were interviewed by telephone, chief reasons for not returning for screening are listed in priority order in Figure 1.

For a detailed list of reasons why participants chose to seek screening, see draft manuscript, Appendix ____.

Figure 1. Nonsustainers Chief Reasons for Not Returning for Screening

- Sought screening from own physician after having attended the free screening one time
- Lack of action to prioritize personal health concerns
- Apprehension about seeing a physician and fear of a bad report
- Forgot the date or did not know the date
- Discomfort/apprehension for the digital rectal exam

4 a, b, c. The participant mailing list was selected, and the prostate health questionnaire was mailed in 2003 and 2004 to nonreturnees or *nonsustainers* across the preceding study years. Questionnaires were mailed with a crisp dollar bill as an incentive to encourage return of the questionnaire. We attempted to update addresses from the local telephone directory and through the Internet using a *people finder* search tool. Reminder postcards were mailed four weeks later. See Questionnaire - Prostate Health Questionnaire 2003, Appendix G and a detailed analysis in Appendix I. Prostate Cancer Screening Do I or Don't I Participate? Identifying Predictors of Sustained Participation in Screening Programs.

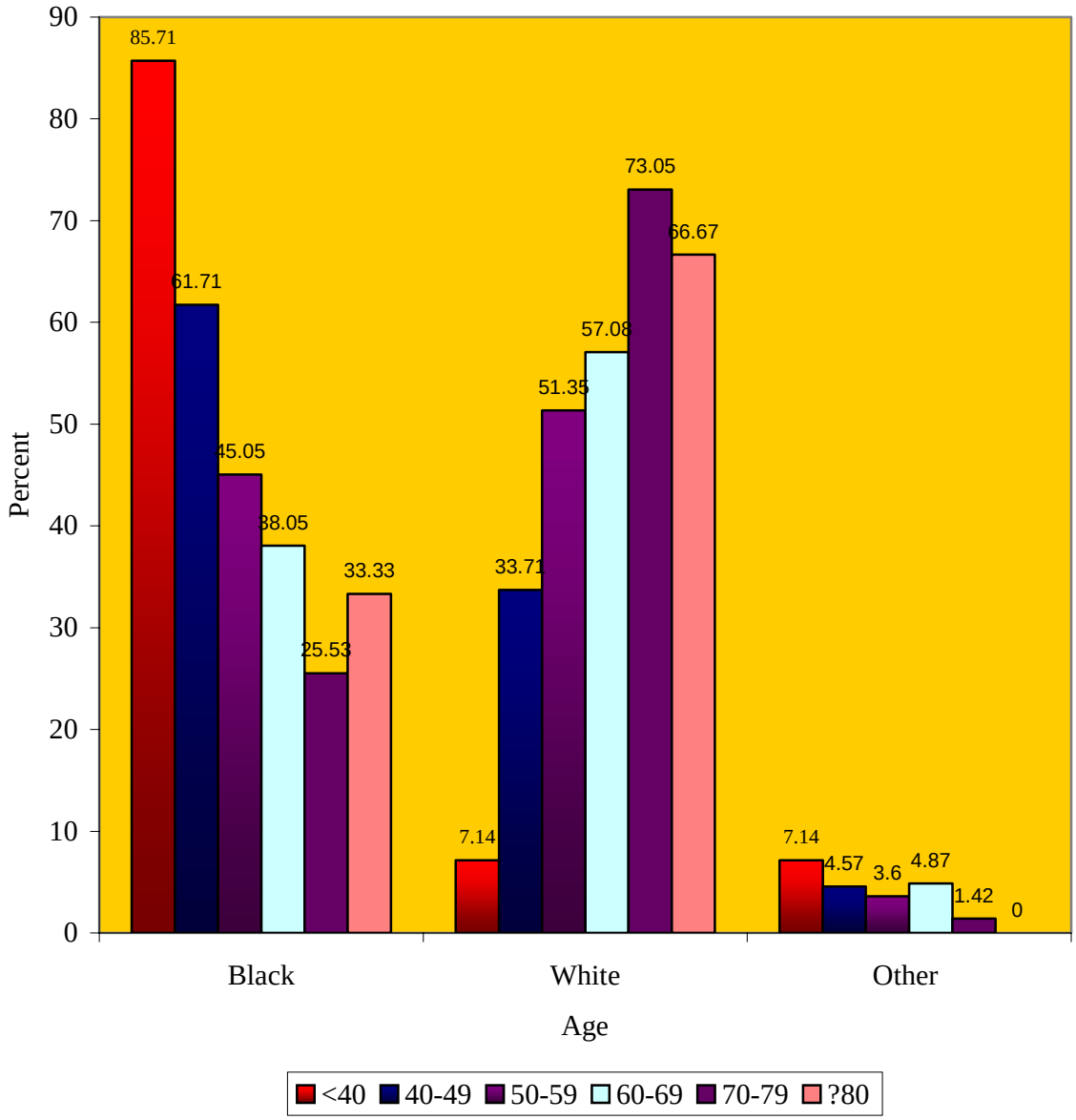
Task 5a, b, c & 6 a, b. A database was prepared from the returned questionnaires, data entered into a database, cleaned up, and analyzed. Interim statistical analyses of returned questionnaires, and reports.

A careful analysis for each cohort year's list of participants found that there were participants who skipped a year or two, or several years, but who returned in a subsequent year. Therefore, the definition of nonsustainer was redefined to be reserved for screening clinic participants who presented for screening only one time between 1998 and 2004. At the initial calculation of nonsustainers between years 1998 and 2003, 933 screening participants of all ethnicities (60.94%) did not return for a screening visit by the 2003 September screening clinics, meaning that they attended screening only once across study years. Among these participants, 737 (79%) self-identified as African American, 715 (76%) as White, 79 as Asian, Latino, or 'Other; and 31 did not indicate or answer the item for race. The total for 'Other Ethnicity' & 'question not answered'=110.

We determined that we reached increasing numbers of less well educated participants by the end of the study. In the 2003 analysis, 73% of White participants had some college or higher, in fact, 64 % were college graduates, had either some graduate or professional school education, or had advance degrees. Among African American participants, 63% had some college or higher and 47 % had either some graduate or professional school education, or had advance degrees. By 2005, one year after the study ended, comparison of education levels of screening clinic participants found a greater preponderance of less than college educated men participating in the screening. Using education as a proxy for income, these data show that in three years of the study, we had 73% of less well educated African American men participating in the free screening, compared to

just 27% of less well educated White men. Two years after the study end, sustainability of less well educated African American men participating in the screening clinics leveled at 60% compared to 35% of the White participants.

Figure 2. Year 2003-2004 Age Distribution of Participants in Free Prostate Screening Program by Race



"*Black*' and '*African American*' are use interchangeably throughout this study and report. In the study questionnaires, participants were provided 'black' as a racial designation. Among study participants were men of African heritage who had migrated to the United States. These men are correctly racially categorized as 'black' as they are not of American heritage. In discussing study findings, racial categories of black and African American are combined and frequently labeled as 'black' rather than separate categories for '*Black*' and '*African American*'.

In the 2003 nonsustainers cohort, Figure 3, when sustainer and nonsustainers data are compared, what seemed more significant is the relationship of race to sustainment of screening as one aged and by educational attainment. We found that while sustained screening increased with increasing age among White men, in African American men the reverse was true. African American men tended to present for screening more often in the younger years (40's and 50's). As they aged, their participation decreased. Participants of all ethnicities who had PSA values generally regarded as within a normal range at that time (<4ng/ml) were more likely than those with abnormal PSA values to sustain participation. What we do not know in our study is the number of men who are diagnosed with prostate cancer as a result of attending one of the free screening clinics. We assume that most of those men are less likely to return for screening. In a community-based prostate cancer screening program in Michigan, Barber et. al (1998) also found significant differences in age by racial groups with African American participants having a lower mean age than white participants.

Figure 3. Characteristics by sustainer status

Year 2004	Sustainers N=364 (35.5%)	Non – Sustainers N=660 (64.5%)	*p- value
Age			
≥80	13 (3.57)	14 (02.12)	p=0.06
70-79	56 (15.38)	85 (12.88)	
60-69	104 (28.57)	123 (18.64)	
50-59	117 (32.14)	216 (32.73)	
40-49	60 (16.48)	116 (17.58)	
Missing data	14 (3.85)	106 (19.06)	
Race			
Black	161 (44.23)	293 (44.39)	p=0.08
Other	7 (1.92)	37 (05.61)	
White	195 (53.57)	329 (49.85)	
Missing data	1 (0.27)	1 (0.15)	
Education			
< High School	32 (8.79)	55 (8.33)	p=0.10
High School Graduate	72 (19.78)	103 (15.61)	
Technical School	59 (16.21)	93 (14.09)	
Some college or more	163 (44.78)	350 (53.03)	
Missing data	38 (10.44)	59 (8.94)	

*p values do not include missing data.

Figure 4. Odds ratios by sustainer status

	Sustainers N=364	Non – Sustainers N=660	OR (95 CI)	Adjusted OR† (95 CI)
Age	n=358	n=574		
≥80	13 (3.63)	14 (2.44)	2.32 (0.76 – 7.08)	1.73 (0.41 – 6.22)
70-79	56 (15.64)	85 (14.81)	1.65 (0.68 – 3.99)	1.18 (0.43 – 3.23)
60-69	104 (29.05)	123 (21.43)	2.11 (0.89 – 4.99)	1.46 (0.58 – 3.71)
50-59	117 (32.68)	216 (37.63)	1.35 (0.58 – 3.17)	1.04 (0.43 – 2.54)
40-49	60 (18.99)	136 (23.69)	1.29 (0.53 – 3.11)	0.97 (0.39 – 2.40)
Race	n=363	N=659		
Black	161 (44.35)	293 (44.46)	0.95 (0.73 – 1.23)	1.02 (0.74 – 1.39)
Other	7 (1.93)	37 (5.61)	**0.38 (0.16 – 0.89)**	0.38 (0.14 – 1.03)
White	195 (53.72)	329 (49.92)		
Education	n=326	n=601		
< High School	32 (9.82)	55 (9.15)	1.32 (0.81 – 2.16)	1.37 (0.80 – 2.34)
High School Graduate	72 (22.09)	103 (17.14)	**1.49 (1.04 –2.13)**	1.59 (1.08 – 2.33)
Technical School	59 (18.10)	93 (15.47)	1.37 (0.94 – 2.01)	1.51 (1.01 – 2.28)
Some college or more	163 (50.00)	350 (58.24)		

Between 1998 and 2004, there had been 1,882 ever screened participants in the annual free screening program. Sixty percent of the participants only attended one screening. In 2005, 399 (28%) questionnaires that had been mailed to nonsustainers were completed and returned. On the other hand, only 42 questionnaires to nonsustainers were returned by the U.S. postal service as undeliverable due to insufficient address (no longer at the address, or the addressee was unknown).

Figure 5. Sustainers across Study Years by Race

Year	Total N (%)	Black N (%)	White N (%)
1998-99	118 (24.4)	46 (20.3)	72 (29.6)
1999-00	158 (36.0)	59 (31.4)	97 (40.3)
2000-01	165 (39.9)	65 (40.4)	98 (41.0)
2001-02	222 (48.4)	98 (50.0)	116 (48.7)
2002-03	225 (45.9)	110 (43.8)	104 (54.5)
2003-04	235 (49.3)	123 (47.5)	102 (52.6)
2004-05	237 (46.6)	131 (44.6)	92 (56.8)
Total	1,360	632 (40%)	681 (48%)

The proportion of White participants who returned the subsequent year generally increased each year from about 30% returning the second year to nearly 60% returning between 2004 and 2005 (post study), Figure 5. Among Blacks the proportion returning the subsequent year followed the overall pattern of sustainers, 40%, while for Whites sustainers were at 48%, Figure 6.

Figure 6. Sustainers Categorized by Race and Age

Year	Black			White		
	<50	50+	Total	<50	50+	Total
1998-99	7 (15.2)	39 (84.8)	46	9 (13.5)	63 (87.5)	72
1999-00	5 (8.5)	54 (91.5)	59	11 (11.3)	86 (88.7)	97
2000-01	5 (7.7)	60 (92.3)	65	9 (9.2)	89 (90.8)	98
2001-02	15 (15.3)	83 (84.7)	98	9 (7.8)	107 92.2)	116
2002-03	20 (18.2)	90 (81.8)	110	6 (5.8)	98 (94.2)	104
2003-04	18 (14.6)	105 (85.4)	123	5 (4.9)	97 (95.1)	102
2004-05	24 (18.3)	107 (81.7)	131	9 (9.8)	83 (90.2)	92

In 2004, the final study year, a list of nonsustainers was determined from screening participants who had not returned between 2003 and 2004. Among 236 nonsustainers, 90 (38%) returned their questionnaire and answered questions about their failure to return. Slightly fewer, 39%, were African American, and 49% were White. These findings represent only two years and they can not be fully compared to the nonsustainer questionnaire results of 2003, as 2003 represented a wider range of years – 1998 to 2003. However, in this last nonsustainer analysis, African American nonsustainers were less well educated: 37% of African American nonsustainers compared to 70% of White nonsustainers were likely to have a college education or higher (graduate or professional school education). Ninety-one percent of White nonsustainers had a family doctor and 82% had sought care in the preceding 12 months. Seventy-one percent of African Americans had a family doctor and 74% had sought care in the preceding 12 months. For African and White alike, the higher ranked reasons that kept them from returning were that they had sought prostate care from their doctor, 27% and 31% respectively. African Americans and White similarly ranked time of the clinic (presumed inconvenient) as the second highest ranked reason for not returning was, 31%, and 32%, respectively. Among White nonsustainers, 70% indicated that they were retired and 25% indicated that they were still working, which suggests higher likelihood of having options for insurance covered prostate exams. While among African American nonsustainers, only 26% were retired and 51% were still working. This suggests that only half of nonsustainers might have options for health insurance or self-pay for prostate exams.

Specific Aim #3: Define strategies that will encourage consistency in participation of lower-income African American men in prostate cancer screening clinics.

Hypothesis: Strategies using tailored message can be conducted in the African American community, which encourage African American men, especially economically disadvantaged African American men, to seek regular prostate cancer screening at free screening clinics. An overriding expectation of this study is to define strategies to reduce the health disparity in late screening of prostate cancer among many African American men.

Task 7. Strategies were developed based on the facilitators and barriers derived from the questionnaires.

7a. Tailored messages were developed.

7b. Messages were mailed to men who did not return for screening in year 3 to encourage their participation in the year 3 free screening (Task 4). Identical messages were listed and ranked among screening sustainers.

Intervention strategies were identified to sustain free screening:

- Consistent marketing of the screening clinics in community newspapers and churches, a mailing list of 500 Durham churches was compiled. The church list was obtained from the Ministerial Alliance, however, it was not identified by ethnic groups. Therefore, mailings were done to the full list which encouraged screening participating by men of all ethnic groups, including African American. Announcements about the screening clinics were broadcasted on one radio station with a primarily African American listening audience. In year 2, an interview about prostate cancer screening was conducted by this radio station with the PI, co-PI, and nurse manager of the low-income clinic.
- Maintaining a consistent calendar date for the screening was instituted with the advent of the study. The free screening clinic has been scheduled consistently on the third weekend of September, at the same time.
- Annually, screening participants from two previous consecutive years were mailed a flyer with clinic location and dates.
- The marketing flyer was developed with consultation from the study PI. to contain tailored messages. Flyers and reminder postcards were consistent in color (goldenrod) over the study years for easy recognition.
- To increase participation by men who were uninsured or low-income in each of the study years, the nurse supervisor at the low-income clinic mailed letters to 1,000 non-white men 40 years and older (each study year). Clinic patients were targeted who had not been formally informed or recruited to the screening clinic in previous years.
- Tailored messages were developed to be used in marketing the free screening clinics.
- These messages were provided to nurses and others who organize the free screening clinics to include in announcements about the screening opportunity. These messages were based upon reasons most frequently cited as facilitators and barriers to clinic participation. This data was obtained from questionnaires that were administered to nonsustainers and sustainers in study year 2, and also suggested messages that had been discussed among church pastors.
- An observation not a part of this study's specific aims, but very important for return participation was the professional manner in which clinics were conducted. All screening labs were drawn by certified phlebotomists. Clinic exam room operations were managed by registered nurses. Examinations were done by urologists. Examination results were provided to participants in a confidential letter in a timely manner.

Most frequently cited reasons for seeking free prostate cancer screening were framed into tailored messages and used in marketing the free screening clinics.
The tailored messages were ranked fairly consistent by race as chief reasons for seeking free prostate cancer screening:

Rank order among all participants

- It (*screening*) gives me peace of mind, to protect my health
- The doctors are urology specialists
- It's convenient and on a weekend
- I'm doing the right thing
- It's free
- If I had signs – I'd like to know early
- I am in control of what happens to my health
- I know I need to get it done every year
- I want to have both the blood test and prostate exam
- At my age I should get screening

Figure 7. Rank order among African American participants:

Top choices for seeking screening	**Rank**
At my age I should get the digital rectal exam	68%
I believe in protecting my health	55%
If I had signs – I'd like to know early	45%
Getting prostate cancer screening gives me peach of mind	30%
The time of the free prostate cancer screening clinic	30%

Figure 8. Rank order among White participants:

Top choices for seeking screening	**Rank**
At my age I should get the digital rectal exam	72%
I believe in protecting my health	59%
If I had signs – I'd like to know early	41%
The time of the free prostate cancer screening clinic	37%
Getting prostate cancer screening gives me peach of mind	33%
I believe that I am in control of what happens to me	30%

Task 8a and 8b. Final study analyses; 8b. Study summary and final reports.

Data was cleaned for analyses. Participant files with missing data were not included. This will give different slightly different findings when previous year reports are compared with the final study report. Between 1998 and 2004 there were 1,882 participants across racial and ethnic groups in the annual free prostate screening clinics. Sixty percent (1,121) attended one screening only. These comprise our nonsustainers for this study. The 40% who attended multiple visits are referred to as our sustainers. Across races and ethnic groups, sustainers were likely to be older, over 50 years of age. Ninety-seven percent were 40 years and older. We also found that nonsustainers returned for screening in 2004 after one or more year's absence, prompted by our continued mailing an announcement to them with tailored messages about why men choose to get screened. They were moved to the sustainer category for final data analysis.

Income was not obtained on study participants in an effort not to discourage participation, and to decrease any participant concern that they might be billed later or questioned about ability

or non-ability to pay for what was advertised as a free service. Therefore, education was used as a proxy for low-income potential. In the first study year, 64% of African American study participants had some 4-year college or higher, including graduate and professional education. Among White participants, 73% had 4-year college or higher, including graduate and professional education. By one year post study (2005), an increase in African American male participants found fewer African American men with higher education (26%), and an increased number of men of the same race in lower educational levels. This indicates that we were able to successfully recruit an increased number of men with fewer years of education, which was a goal of this study.

With consistent marketing of the free clinics, we were able to steadily increase overall participation among African American men from one year to the next so that more African men presented for screening by 2004 than whites. An important finding from this study year is that sustained participation for African American men was surprisingly low, for example, 56% of those who came in 2003 did not return for screening in 2004. Across study years, African American men were more likely to be among the non-sustainers (60.6%). There was a statistically significant difference between sustainers and nonsustainers by race and age ($p<0.001$).

Overall, 96% of men who sought screening were over age 40. Screening participation of African American men and White men one year following the end of the study (2005) was compared to study findings. When a post study year analysis was made, among participants 50 and over, 81.7% were African American and 38% were White. This indicates that overall we are targeting the race and age group considered at higher risk that has been stressed as most appropriate for screening among health care organizations.

Unexpected Difficulties Encountered:

Continued difficulties were encountered across study years for church recruitment to conduct education sessions. Pastors continued to state an interest but consistently stated that they had to check the church activity calendars. Upon call backs, pastors continued to fail to follow through. What the PI observed was that after the study ended, contact was initiated by some of the church pastors or their representative to request education sessions. Two sessions were requested and conducted within one year following the study end. This strongly suggests that the PI's being known as an expert available to churches provided a resource when they were ready to place prostate health on their agenda.

Determining an accurate unduplicated screening participant list from one year to the next has been a challenge. There are no official clinic or hospital medical record entries maintained for participants in the free screening clinics. All participant records were maintained in the confidential study files. Therefore, a medical record number could not be used. It has been discovered by study personnel that participants sometimes use different names in multiple years. For example:

1. Participants may have used their first name on one visit and their middle name on another.
2. Participants sometimes used a first initial and middle name.
3. Participants used "Jr" or "Sr" inconsistently.
4. Sometimes participants reversed their first and last name when completing the registration materials.
5. Middle initials were used inconsistently from one year to the next.

6. Errors occurred in participants' recording their birth year.
7. There were participants who had the same names.
8. Returning participants may have a change of address coupled with variations in how they list their name on registration materials.

Effort was made across study years to achieve database accuracy. We do not have a method to identify participants who were deceased during the study period. In some cases, spouses notified us of the death of a husband when the questionnaire was received. When a death is known, it is indicated in the database and no further information was mailed to that address.

Training Activities

PI met with mentors (Cary Robertson, MD, and Paul Godley, MD) on a regular basis to discuss study progress and was continually updated on new publications of relevance to the study and prostate cancer. For professional development, PI attended prostate cancer and related seminar activities in cancer control research at the University of North Carolina, Chapel Hill, and Duke University Medical Center, Durham.

PI participated in the U.S. Army Department of Defense, Integration Panel for Prostate Cancer Research, 2002 and 2003.

PI Attended and exhibited a poster at the CaP CURE Ninth Annual Scientific Retreat.

Research Administrative Activities

PI held regular meetings with study staff to discuss study progress, data entry, data analyses, and project issues.

Key Research Accomplishments

- Complete database of 1,882 study participants maintained across three study years, followed by data analyses and outcomes.
- Draft Manuscript: Church Based Promotion of Prostate Cancer Screening: A Review of the Literature, Appendix C.

Master of Public Health Thesis and Draft Manuscript. Prostate Cancer Screening Do I or Don't I Participate? Identifying Predictors of Sustained Participation in Screening Programs, Appendix I.

Reportable Outcomes

Abstracts/Presentations

Price, M.M. (2002, June). "Free Community Prostate Cancer Screening in A Small Urban Community". Poster presented at the 18th Union of International Cancer Congress, Oslo, Norway.

Price, M.M. (2002, August). "Prostate Cancer Screening – Who Attends and Why". Podium presentation at the 12th International Conference on Cancer Nursing 2002: Making A Difference, London. Published Abstract, p. 28.

Price, M.M. & Robertson, C.N. (2002, September). "Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics". Poster presentation at the Ninth Annual CapCure Scientific Retreat Program, Washington, D.C.

Price, M.M., Powe, B.D., & Underwood, S.M. (2003, March). Symposium 22 "From Research to Practice to Policy: Designing Research-Based Interventions Focused on Cancer

Prevention and Control Among African-Americans". 24th Annual Meeting and Scientific Sessions for the Society of Behavioral Medicine, Salt Lake City, Utah.

Price, M.M. (2003, October). "Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics in Durham, North Carolina" Sixth Annual Sigma Theta Tau Research Day Conference: Health Disparities in Underserved Minority Populations from a Global Perspective. North Carolina A&T State University School of Nursing, Greensboro, N.C. p.13.

Price, M.M., & Combs, I. (2003, November 7-9)."How to Use Innovative Health Education and Screening Programs to Promote Health in the African American Community: Durham, North Carolina and Omaha, Nebraska". Symposium conducted at the 4th Annual Institutes of Learning Conference. Oncology Nursing Society, Philadelphia, Published Abstract p. 27-31.

Price, M.M., Jackson, S.A., & Robertson, C.N. (2004, March). "Utility of Longitudinal Prostate Specific Antigen Measures in a Screening Population", Intercultural Cancer Council and Baylor College of Medicine: 9th Biennial Symposium on Minorities, The Medically Underserved & Cancer, Washington, D.C. Published Abstract p. 37.

Price, M.M., Jackson, S.A., & Robertson, C.N. (2004, November). "Utility of Longitudinal Prostate Specific Antigen Measures in a Screening Population", poster presentation at the 132nd Annual Convention of the American Public Health Association, Washington, D.C. Published Abstract p. 37.

Price, M.M. (2005, June). "Partnering Mentoring and Education in Prostate Cancer Control", Cancer Prevention and Detection Dissemination Colloquium, invited, podium presentation as outcome of the NCI and Oncology Nursing Society grant collaboration, Chicago.

Price, M.M., Robertson, C.N. & Jackson, S.A., (2006, March). "Longitudinal Variation in Prostate-Specific Antigen Levels in a Screening Population". Poster presentation at the 70th Annual Meeting of the Southeastern Section, American Urological Association, Inc, Rio Grande, Puerto Rico, Published Abstract p. 110.

Price, M.M., Robertson, C.N. & Jackson, S.A., (2006, March). "Longitudinal Variation in Prostate-Specific Antigen Levels in a Screening Population". Poster presentation, Duke University Medical Center Comprehensive Cancer Center Annual Meeting, Published Abstract p. 137.

Echols, P. & **Price, M.M.** (2006, April). "The Association of Race on Prostatic Specific Antigen (PSA) Velocity and PSA Doubling Time Prior and Post Radical Prostatectomy", Podium presentation, Intercultural Cancer Council-10th Biennial Symposium on Minorities, the Medically Underserved and Cancer, Baylor College of Medicine-Houston, TX, held in Washington, D.C.

Price, M.M. & Robertson, C.N. (2006, March). "Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics". Poster presentation, Duke University Medical Center Comprehensive Cancer Center Annual Meeting, Published Abstract p. 139.

Price, M.M. (2006, June). "Prostate Cancer Screening: Coming to Terms with Controversies". Podium presentation, American Academy of Nurse Practitioners, 21st National Conference, Dallas, Texas.

Conclusions

Strategies used in this study show that African American men will respond to tailored messages. Their prostate cancer screening participation can be increased significantly. African American men who should be targeted for mass screening programs are those from lower educational attainment (less than high school and high school); African American men who have never been screened; men who present for screening at younger ages and decrease screening as they age towards the 50's and 60's; and African American men who present for an initial screening with no follow up screening in subsequent years. A challenge remains to sustain high participation

in the free prostate cancer screening from one year to the next, and over several years. Churches can be a source of prostate cancer screening promotion once the church leaders identify men's health as a priority. Our new participants recruitment efforts in this study continued to be in the risk and age-related screening range that is supported by national health care organizations, with increased participation by African American men, and the majority of participants falling primarily in their 50's, and the next larger group in their 40's.

Consistency from one year to the next in scheduling free clinics and in developing marketing materials is important. In this study tailored messages were developed which respond to reasons men give for not returning, and also for reasons given that they seek screening. Targeted direct mail reminders can promote use of free screening clinics. Over half of study participants indicated that they heard about the screening by a post card or letter that they received in the mail.

So What

Strategies employed in this study worked for a few years. However, sustaining participation is a major challenge. We can get men to screening; some will stop participation in the free clinics rather requesting subsequent screening from their health care provider. We want to see that happen. However, there is probably a larger group of at risk men (because of race and age, and lower educational attainment) who are screened one or two times and drop out of prostate cancer screening. Keeping them in annual screening over time is not easy. In the free screening clinics conducted a year following the study's end, continued use of the successful strategies indicated that these strategies worked to main participation for a large portion of participants. This research is very important as there is no previous literature that has examined best practices and how to sustain screening participation in mass community screening drives.

Future Work

PI plans to continue to stay involved as a volunteer with the annual free clinics. Many communities across North Carolina hold mass prostate screening initiatives in September of each year. The PI's informal inquiry with the leadership in those clinics finds that none keep databases to determine which participants sustain screening. Nor has there been evaluation conducted to determine best practices to improve free (temporary) clinic operation and participation. Of particular interest by the PI is the continued utility of the tailored message and further exploration of best practices to sustain participation in the clinics over time. PI is interested in examining sustained participation for men with rising prostate specific antigens.

References

American Cancer Society. (2006). Cancer facts and figure – 2006. Atlanta: American Cancer Society, Inc.

American Cancer Society (2006). Cancer facts & figures for African Americans. Atlanta: American Cancer Society, Inc.

American Cancer Society (2006). Cancer Prevention & early detection facts & figures. Atlanta: American Cancer Society, Inc.

Abbott, R.R., Taylor, D.K. & Barber, K. (1998). A comparison of prostate knowledge of African-American and Caucasian men: changes from prescreening baseline to postintervention. Cancer Journal of Scientific American, 4(3): 175-7.

AHRQ (2002). Task force finds evidence lacking on whether routine screening for prostate cancer improves health outcomes. Retrieved February 20, 2006, from http://www.ahrq.gov

Anonymous. Prostate-specific Antigen (PSA) best practice policy. American Urological and Association .(2000). Oncology, 14 (2): 267-72, 277-8, 280.

Boehm S., Coleman-Burns P., Schlenk E.A., Funnell M.M., Parzuchowski J., & Powell I.J., (1995). Prostate cancer in African American men: increasing knowledge and self-efficacy. Journal of Community Health Nursing, 12(3),161-9.

Bozeman, C, Williams, B.J., Whatley, T., Crow, A., Eastham, J.(2000). Clinical and biopsy specimen features in black and white men with clinically localized prostate cancer. Southern Medical Journal, 93(4):400-2.

Brawley, O.W., Knopf, K, & Merrill, R. (1998). The epidemiology of prostate cancer part 1: descriptive epidemiology. Seminars in Urologic Oncology, 16(4), 1998, 187-192.

Briss, P., Rimer, B., Reilley, B., Coates, R., Lee, N.C., Mullen, .P, Corso, P., Hutchinson, A.B., Hiatt, R., Kerner, J., George, P., White, C., Gandhi, N., Saraiya, M., Breslow, R., Isham, G., Teutsch, S.M., Hinman, A.R., Lawrence, R. Task Force on Community Preventive Services. (2004). Promoting informed decisions about cancer screening in communities and healthcare systems. American Journal of Preventive Medicine. Atlanta: Centers for Disease Control and Prevention, Epidemiology Program Office, 26 (1), 81-3.

Concato, J, Wells, C.K., Horwitz, R.I., Penson, D., Fincke, G., Berlowitz, D.R., Froehlich, G., Blake, D., Vickers, M.A., Gehr, G.A., Raheb, N.H., Sullivan, G., Peduzzi P. The effectiveness of screening for prostate cancer: a nested case-control study. (2006). Arch Intern Med., 166(1), 38-43.

Catalona, W. J., (2006). Understanding the facts about PSA testing. The Clinical Advisor, 37-38, 40.

Collins, M. (1997, January - February). Increasing prostate cancer awareness in African American men. Oncology Nursing Forum, 24(1), 91-5.

Cowan, M.E., Kattan, M.W.& Miles, B.J. (1996). A national survey of attitudes regarding participation in prostate carcinoma testing. Cancer, 78 (9): 1952-7.

Crawford, ED (1997). Prostate cancer awareness week: September 22 to 28, 1997, CA Cancer Journal For Clinicians, 47 (5), 288-296.

DeAntoni, E. & Crawford, D. (1994). Strategies: Prevention, early detection, treatment, of prostate cancer, New Perspective in Cancer Diagnosis and Management, 2(1), 1994.

Demark-Wahnefried, W., Strigo, T., Catoe, K., Conaway, M., Brunetti, M., Rimer, B.K., & Robertson, C.N. (1995), Knowledge, beliefs, and prior screening behavior among blacks and whites reporting for prostate cancer screening.Urology, 46, 346-351.

Elhilali, M.M. (2000). PSA screening: the bottom line. CMAJ, 21;162 (6):791-2.

Eyre, H.J., (1997).The American Cancer Society's prostate cancer position. CA Cancer Journal for Clinicians, 47(5):259-60.

Fleshner, N., Rakovitch, E., Klotz, L. (2000). Differences between urologist in the United States and Canada in the approach to prostate cancer, The Journal of Urology, 163 (5): 1461-1466.

Frederick, L. (2006). Who gets PSA testing, when? The Clinical Advisor, 1.

Gelfand, D., Parzuchowski, J., Cort, M., Powell, I. (1995). Digital rectal examinations and prostate cancer screening: attitude of african american men. Oncology Nursing Forum, 22, 1253-1255.

Gerard, M.J. and Frank-Stromborg, M. ((1998). Screening for prostate cancer in asymptomatic men: clinical, legal, and ethical implications. Oncology Nursing Forum, 25 (9), 1561-1569.

Godley, P. (1999). Prostate cancer screening: promise and peril – a review. Cancer Detect Prevention, 23(4), 316-24.

Hankey, B.F., Feuer, E.J., Clegg, L.X., Hayes, R.B., Legler, J.M., Prorok, P.C., Ries, L.A., Merrill, R.M., & Kaplan R.S. (1999). Cancer surveillance series: interpreting trends in prostate cancer--part I: Evidence of the effects of screening in recent prostate cancer incidence, mortality, and survival rates. Journal of the National Cancer Institute, 91(12):1017-24.

Landis, SH, Murray T, Bolder S: Cancer statistics, (1999). CA Cancer Journal for Clinicians, 49:8-31.

Lu-Yao, G., Stukel, T.A., Yao, S-L. (2003). Prostate-specific antigen screening in elderly men. Journal of the National Cancer Institute, 95, 1792-1797.

Mann, B.D, Sherman,L., Clayton, C., Johnson, R.F., Keates, J., Kasenge, R., Streeter, K., Goldberg, L, and Nieman,L.Z. (2000). Screening to the converted: an educational intervention in African american churches. Journal of Cancer Education, 15 (1), 46-50.

McNaughton Collins, M., Stafford, R.S., Barry, M.J. (2000). Age-specific patterns of prostate-specific antigen testing among primary care physician visits. Journal of Family Practice, 49 (2): 169-72.

Merrill, R.M. & Stephenson, R.A. Trends in mortality rates in patients with prostate cancer during the era of prostate specific antigen screening.(2000). Journal of Urology, 163(2):503-10.

Murthy, G.D. Byron, D.P., Pasquale, D. (2004). Underutilization of digital rectal examination when screening for prostate cancer. Arch. Internal Medicine, 164, 313-316.

Myers, R.E. (1999). African American men, prostate cancer early detection examination use, and informed decision-making. Seminars in Oncology, 26 (4), 375-381.

Myers, R.E., Wolf, T.A., McKee, L., McGrory, G., Burgh, D.Y., Nelson, G., Nelson G.A. (1996). Factors associated with intention to undergo annual prostate cancer screening among African American men in Philadelphia. Cancer, 78(3), 471-9.

National Cancer Institute, SEER Cancer Statistics Review, 1973-1998, SEER Program. Bethesda, MD, National Cancer Institute. NIH http://seer.cancer.gov/Publications/CSR1973_1998/

N.C. Center for Health and Environmental Statistics, 2006.

O'Dell, K.J., Volk, R.J., Cass, A.R., Spann, S.J. (1999). Screening for prostate cancer with the prostate-specific antigen test: are patients making informed decisions? Journal of Family Practice, 48(9), 682-8.

Powell, I.J., Banerjee, M., Novallo, M., Sakr, W., Grignon, D., Wood, D.P., Pontes, J.E., (2000). Journal of Urology, 163 (1): 146-8.).

Ransohoff, D.F., McNaughton Collins, M., Fowler, F.J. (2002). Why is prostate cancer screening so common when the evidence is so uncertain? A system without negative feedback. American Journal of Medicine, 1;113 (8), 691-3.

Rosenstock. I: The Health Belief Model: Explaining Health behavior Through Expectancies, in Glanz K, Lewis F, Rimer B (eds): Health behavior and Health Education. San Francisco: Jossey-Bass Publishing, 1990, pp. 39-62.

Rosenstock, I.M., Strecher, V.J, Becker, M.H. (1988). Social learning theory and the health belief model. Health Education Quarterly, 15:175-183.

Ruffin, M.T., Gorenflo, D.W., and Woodman, B. (2000). Predictors of screening for breast, cervical, colorectal, and prostatic cancer among community-based primary care practices. Journal of the American Board of Family Practice, 13 (1), 1-10.

Sadler, G.R, Sethee, J., Tuzzio, L., Sieben, M., Celine, M.K., & Christ, H.N. (2001). Cancer education for clergy and lay church leaders. *Journal of Cancer Education* 16, 146-149.

Sheldon, H.F. and Marks, M.D. (2001). Prostate-specific antigen testing – an essential guide to its use and meaning. Advance for Nurse Practitioners, 39, 43-44.

Smith, D.S., Bullock, A.D., and Catalona, W.J. (1997). Racial differences in operating characteristics of prostate cancer screening tests. The Journal of Urology, 158 (5), 1861-1865.

Stanford, J.L., Stephenson, R.A., Coyle, L.M., et al: Prostate Cancer Trends 1973-1995. (1998). SEER Program. Bethesda, MD, National Cancer Institute. NIH.

Thompson, I.M, Resnick, M.I, & Klein, E.A. (2001). *Prostate cancer screening*. New Jersey: Humana Press.

Tingen, M.S, Weinrich, S.P., Boyd, M.D. & Weinrich, M.C.(1997). Prostate cancer screening: predictors of participation. Journal of the American Academy of Nurse Practitioners, 9(12): 557-67.

Tingen M.S., Weinrich S.P., Heydt, D.D., Boyd, M.D., Weinrich, M.C. (1998). Perceived benefits: a predictor of participation in prostate cancer screening. Cancer Nursing, 21(5):349-57.

Tingen, M.S., & Weinrich, S.P. (1998).(Perceived benefits: a predictor of participation in prostate cancer screening. Cancer Nursing, 21 (5): 349-57.

Underwood, S. (1992). Cancer risk reduction and early detection behaviors among black men: focus on learned helplessness. Journal of Community Health Nursing, 9, 21-31.

Weinrich, S. (2001). The debate about prostate cancer screening: what nurses need to know. Seminar in Oncology Nursing, 17 (2), 78-84.

Weinrich, S.P., Boyd, M.D., Bradford, D., Mossa, M.S., Weinrich, M., (1998). Recruitment of African Americans into prostate cancer screening. Cancer Practice, 6(1): 23-30.

Weinrich S., Holdford D., Boyd M., Creanga D., Cover K., Johnson A., Frank-Stromborg M., & Weinrich M. (1998, June*)*. Prostate cancer education in African American churches. *Public Health Nursing*, 15(3), 188-9.

Wingo, P, Bolden, S, Tong T, Parker S, Martin L, heath C. (1996). Cancer statistics for african americans. CA Cancer Journal for Clinicians, 46: 113-25.

Appendices

Appendix A: Physicians Consent Form

Appendix B: Pastors Consent Form

Appendix C: Church Based Promotion of Prostate Cancer Screening: A Review of the Literature

Appendix D: Screening Announcement Flyer

Appendix E1: 2003 Questionnaire to determine barriers and facilitators to sustained screening
Appendix E2: 2004 Questionnaire to determine barriers and facilitators to sustained screening

Appendix F: Verbal Consent for Telephone Interview

Appendix G: Prostate Health Questionnaire

Appendix H: Prostate Cancer Screening Do I or Don't I Participate? Identifying Predictors of Sustained Participation in Screening Programs

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Appendix J: Study Personnel
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Appendix A. Physicians Consent Form

DUKE UNIVERSITY MEDICAL CENTER
SCHOOL OF NURSING

Consent For Research
CONSENT FOR FOCUS GROUP PARTICIPATION

Physicians

Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics

IRB#

You are being asked to voluntarily be part of a research study in the School of Nursing, Duke University Medical Center. You are being asked to participate in a focus group discussion about prostate cancer screening. You will be one of approximately 15 physicians who will be asked to participate in a discussion group.

This discussion group will be about concerns and attitudes toward recommending prostate cancer screening. This study is funded by a grant to the Duke University School of Nursing, Durham, North Carolina, from the United States Army Medical Research and Materiel Command.

A total of approximately 15 participants will be recruited to participate in the physicians group. A two-person male team, consisting of a group facilitator and note taker, will conduct the focus groups. Informed consent will be obtained from the focus group participants prior to the conduct of the group. The focus group session will start following a free catered dinner and will last about 1 ½ -2 hours.

What you and everyone in the group have to say is very important, so Dr. Price would like this session recorded on tape, using two tape recorders (one for backup). The leader will take notes on paper. If you want to have the tape recorder turned off for a while during the focus group, just say so. The summary information will be taken off the tapes and notes without identifying individuals, and the original tapes and notes will be locked in the file cabinet with access only by Dr. Price and study staff. What each person says during this discussion is confidential. The audiotapes will be destroyed at the end of the research study.

There are no known risks to being in this group discussion. It is not expected that any discussion in the group should cause risk or discomfort. There are no direct benefits to you from participating in this group. New findings from this study may be published in scientific journals or presented at scientific conferences. You nor your practice will not be identified in any publication or presentation.

Initials of Participant _____

Consent For Research
CONSENT FOR FOCUS GROUP PARTICIPATION
Physicians
Using a Tracking System to Improve Prostate Cancer Screening and Follow-up in a Small Urban Community

IRB#

The guidelines for conducting of the group will be reviewed with you. These guidelines include: (1) each person is to speak one at a time; (2) it is alright to disagree with what someone else says; however, please listen quietly to what others say and respect their opinion; you may then add your comments and opinion; (3) try not to make unnecessary sounds or noises, such as taping your finger or taping a pencil on the table, or sliding your chair. The extra noises interfere with the recorded conversation on the tape recorder and sound louder than they really are when the tapes are played back; (4) no eating, drinking, or smoking during the focus groups. Refreshments will be provided after the group has ended. Smoking can take place outside the building. If you do not understand the guidelines, either the note taker or group facilitator will take you aside and re-explain the guidelines for conducting the group to you. If you continue to be unable to follow the guidelines, you will be asked to leave the group.

You can refuse to answer any question, and you can leave the group at any time. Participation in this study is voluntary. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may discontinue your participation at any time without penalty or loss of benefits.

It should be noted that representatives of the U.S. Army Medical Research and Materiel Command are eligible to review research records as a part of their responsibility to protect human subjects in research.

Initials of Participant _____

DUKE UNIVERSITY MEDICAL CENTER
SCHOOL OF NURSING

CONSENT FOR RESEARCH

Physicians

Using A Tracking System To Improve Prostate Cancer

Screening And Follow-Up In A Small Urban Community

CONSENT FOR FOCUS GROUP PARTICIPATION

IRB #

"I have read the attached information and have been given the opportunity to discuss it and ask questions. I have been informed that I may contact Dr. Marva Price (919-684-3786 ext. 245) to answer any questions I may have during the discussion. I may also contact the Duke University Medical Center Office of Risk Management at 919-684-3277 for any questions concerning my rights as a focus group participant. I agree to participate, knowing that I may leave the group at any time."

Participant's Signature_____Date_____

Signature of Person
Obtaining Consent

_____Date_____

DUKE UNIVERSITY MEDICAL CENTER
SCHOOL OF NURSING

Consent For Research
CONSENT FOR FOCUS GROUP PARTICIPATION

Pastors

Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics

IRB#

You are being asked to voluntarily be part of a research study in the School of Nursing, Duke University Medical Center. You are being asked to participate in a focus group discussion about prostate cancer screening. You will be one of approximately 20 pastors who will be asked to participate in a discussion group.

This discussion group will be about concerns and attitudes toward recommending prostate cancer screening. This study is funded by a grant to the Duke University School of Nursing, Durham, North Carolina, from the United States Army Medical Research and Materiel Command.

A total of approximately 20 participants will be recruited to participate in the pastors group. A two-person male team, consisting of a group facilitator and note taker, will conduct the focus groups. Informed consent will be obtained from the focus group participants prior to the conduct of the group. The discussion group will last approximately 1½ hours. At the end of the group meeting, you will be given $20 for participating. You are responsible for getting yourself to and from the group.

What you and everyone in the group have to say is very important, so Dr. Price would like this session recorded on tape, using two tape recorders (one for backup). The leader will take notes on paper. If you want to have the tape recorder turned off for a while during the focus group, just say so. The summary information will be taken off the tapes and notes without identifying individuals, and the original tapes and notes will be locked in the file cabinet with access only by Dr. Price and study staff. What each person says during this discussion is confidential. The audiotapes will be destroyed at the end of the research study.

There are no known risks to being in this group discussion. It is not expected that any discussion in the group should cause risk or discomfort. There are no direct benefits to participating in this group. New findings from this study may be published in scientific journals or presented at scientific conferences. You nor your church will not be identified in any publication or presentation.

Participant's Initials _____

DUKE UNIVERSITY MEDICAL CENTER
SCHOOL OF NURSING

Consent For Research
CONSENT FOR FOCUS GROUP PARTICIPATION
Pastors
Using a Tracking System to Improve Prostate Cancer Screening and Follow-up in a Small Urban Community
IRB#

The guidelines for conducting of the group will be reviewed with you. These guidelines include: (1) each person is to speak one at a time; (2) it is alright to disagree with what someone else says; however, please listen quietly to what others say and respect their opinion; you may then add your comments and opinion; (3) try not to make unnecessary sounds or noises, such as taping your finger or taping a pencil on the table, or sliding your chair. The extra noises interfere with the recorded conversation on the tape recorder and sound louder than they really are when the tapes are played back; (4) no eating or beverages during the focus groups. Refreshments will be provided after the group has ended. If you do not understand the guidelines, either the note taker or group facilitator will take you aside and re-explain the guidelines for conducting the group with you.

You can refuse to answer any question, and you can leave the group at any time. Participation in this study is voluntary. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may discontinue your participation at any time without penalty or loss of benefits.

It should be noted that representatives of the U.S. Army Medical Research and Materiel Command are eligible to review research records as a part of their responsibility to protect human subjects in research.

"I have read the attached information and have been given the opportunity to discuss it and ask questions. I have been informed that I may contact Dr. Marva Price (919-684-3786 ext. 245) to answer any questions I may have during the discussion. I may also contact the Duke University Medical Center Office of Risk Management at 919-684-3277 for any questions concerning my rights as a focus group participant. I agree to participate, knowing that I may leave the group at any time." Compensation will be provided at the completion of the group session.

Participant's Signature_____Date_____
Permanent Address (*please print)*:
_____

_____
Signature of Person
Obtaining Consent
_____Date_____

Appendix C. Church Based Promotion of Prostate Cancer Screening: A Review of the Literature

Running head: PROSTATE CANCER AWARENESS

DRAFT

Promoting Prostate Cancer Awareness in the Black Church:

A Review of the Literature

ABSTRACT

This is a review of the literature examining Black churches as a means of increasing prostate cancer awareness. The research addresses the experience of medical professionals implementing church-based health interventions in the black American community through the church and identifies common barriers. The goals of this review are to show the efficacy of church-based interventions in increasing knowledge about prostate cancer and promoting prostate cancer screening.

INTRODUCTION

Prostate cancer is a disease that is diagnosed in one of six males and takes the lives of approximately 30,000 each year (American Cancer Society, 2003). More than 200,000 men will be diagnosed with prostate cancer this year (Pickle, Feuer, and Edwards, 2003). Between 1995 and 1999 the incidence rate for African-American men was 60% higher than their Caucasian counterparts (American Cancer Society, 2003). Black American men are 85% more likely to be diagnosed with prostate cancer and 114% more likely to die from prostate cancer than white men (Burks & Littleton, 1992; Natarajan, Murphy, & Mettlin, 1989).

Genetic susceptibility, socioecological and economic stress factors are thought to contribute largely to the disproportionate rate of prostate cancer among black American males. However, the most prominent contributors to the high rates of prostate cancer among black American men is their relatively low general knowledge about prostate cancer and their reported prostate cancer screening (Agho, Lewis, 2001; Cort, 1996). Prostate cancer screening is one method that has been used to thwart this problem.

Free prostate cancer screening clinics are a cost effective method of disseminating health care to African-American men who would otherwise not receive it. However, several factors such as the discomfort or the unfamiliarity of the examination might hinder them from attending a screening clinic. Anecdotal interviews with men who had undergone prostate cancer screening found that the digital rectal examination is both physically and psychosexually uncomfortable. Prostate cancer is not a regular topic of conversation, among black American men. It lacks the publicity of other types of cancer; so there is an element of social awkwardness as well. In addition to the scarcity of information about prostate cancer, there are uncertainties among lay men about the treatment if cancer is diagnosed, and the reliability of the screening methods. This not

only hinders the credibility of medical professionals in the eyes of African-American men, but it also bolsters the fear of being diagnosed with a disease that is possibly terminal—a fear that is salient for individuals who cannot afford health care. These discomforts and the low level of prostate cancer knowledge among some African-American men create further apprehensions about attending mass screening clinics (Barber K.R. et al, 1998).

Research has shown that the uninsured are four times less likely to get screened than the insured (Merrill, R.M., 2001) partly because a private exam is not an economically available choice. Thus mass screening is targeted at the uninsured because it is of no or low costs to them, but African-American men often do not take advantage of this option. Barber K.R et al. (1998) found that Black men are twice as likely as Caucasians to choose a private exam over a mass screening, even though African-Americans are less likely to have insurance than their Caucasian counterparts.

In response to these barriers to health care in the African-American community several researchers have presented methods of community outreach to eliminate the uncertainties, fears, and mistrust. Research has shown that perhaps the most effective site for health intervention in the African American community has been the church (Campbell, M.K., 2000; Lawson, E., 2002; Wiist, W.H., 1990; Demark-Wahnefried, W., 2000). The visibility and stability of the Black church makes it a credible site for the dissemination of information. However, only 2% of the programs offered by churches in Black communities are directed towards health-related services. Little effort has gone to creating active partnerships between the Black church and health providers.

The goal of this article is to show the efficacy of church-based interventions in promoting prostate cancer. First, I will describe the experience of holding church-based health interventions

and identify common barriers faced by researchers and health professionals promoting prostate cancer screening in black churches. Four major areas exist in the implementation of these studies: recruiting, type of program, onsite screening versus referral to personal physician, and patient follow-up. This work concludes by discussing overall results and weaknesses of the reviewed literature, and then presents directions for future research and prostate cancer prevention. Four articles examining black churches as a means of promoting prostate cancer screening are reviewed.

Two articles were found that specifically address the area of prostate cancer awareness in the Black church. This reemphasizes the need for further literature addressing this issue. The article by Boehm, Schlenk, Funnell, Parzuchowski, and Powell (1996) directly evaluates the efficacy of the church-based intervention in increasing African-American men's knowledge about prostate cancer and prostate cancer screening. The study by Weinrich, Holdford, Boyd, Creanga, Cover, Johnson, Frank-Stromborg, and Weinrich (1998a) examined specific exposures to prostate cancer that influenced attendance at church-based interventions and free prostate cancer screening.

Two other articles addressing the implementation of prostate cancer screenings were also selected. The article by Weinrich, Boyd, Bradford, Mossa, Weinrich (1998b) was chosen because it evaluates the effectiveness of six different sites, including Black churches, for the recruitment of African-Americans into prostate cancer screening. They found that a higher percentage of men got screened (58%) when the message was presented at Black churches than other community sites. The final article by Mann, Sherman, Caytoon, Johnson, Keates, Kasenge, Streeter, Goldberg, and Nieman (2000) examines the implementation of cancer screening promotion programs at three churches.

RECRUITING: *Getting in the door*

Before participants can be recruited, the church must be recruited. Although the church presents an opportunity to moderate the health disparities affecting African-Americans, several barriers exist in working with these institutions. Weinrich et al. (1998a) recruited churches from eleven counties in South Carolina to participate in their Prostate Cancer Project. There were 1,433 churches in the 11 counties. They performed a stratified random sample and 268 of the churches were selected for possible recruitment: 50% of the African-American churches and 10% of the Caucasian churches. Prior to recruitment, they received consultation for the project from a black American minister. Then dinners were held in each county to explain the project to church leaders. Despite their recruitment efforts, they were only able to have the prostate educational program at 55 of the 268 selected. After a highly concentrated effort, 74% of the churches could not be reached. To schedule a program it took between 5-15 calls to each church. When a staff member had friends or family within the church scheduling was relatively easy. Weinrich et al. (1998b) extended this study to include six different sites: state fairgrounds, work sites, housing projects, National Association for Advancement of Colored People (NAACP) sites, barber shops, and churches. They found that the largest number of telephone calls was required to schedule church-based programs than any of the other sites.

Church recruitment is difficult for several reasons. First, pastors and members of black churches are often suspicious of outsiders (Markens et al. 2002,). This is a barrier that has been built up from years of neglect from the medical community and an overall wariness of being "used". As health professionals have become aware of the black American church as a resource, pastors have been bombarded with health information and program proposals (Sanders, 1997). Secondly, churches often have their schedules filled with existing programs allowing little room

for new ones. Pastors are often too overwhelmed with prior obligations and responsibilities to take on the leadership or burden of another project. Moreover, programs are difficult to schedule because there is usually not a consistent person to answer the phone at churches (Weinrich et al., 1998a). Due to these factors when a program is scheduled, attendance is often low and there is little return for the effort put forth to promote and hold the program.

Overcoming these barriers is difficult but is made possible through several avenues. First we must remember that "credibility is the key to acceptance" (Sanders, 1997 p. 374). Credibility not only ensures a good relationship and success for one project, but for all future projects in that community. Medical professionals must always maintain good scientific methods and ethics when pursuing community involvement of any kind. This will prevent barriers from being built up in the future. This paragraph needs some work on detail.

An advantage in successful recruitment of churches is having a contact on the "inside". Using lay members and clergy that are part of the church is an excellent way to open doors for cancer awareness promotion (Sadler G.R., 2001). Recruitment has been more successful when a member of the church is either connected to or part of the research staff (Weinrich et al, 1998a). The familiarity helps ease some of the apprehension of outsiders infiltrating the church and the mistrust towards the medical community.

It is often necessary to network in the African-American community to identify the best avenues through which to develop a program at the local churches. Eng, Hatch, and Callan (1985) documented the need to identify how the church as a unit functions, how information and decisions are networked, and who the influential leaders and members are. Additionally, the intervention must be viewed as important and have the endorsement of governing members of the church (Eng, E., Hatch, J., Callan, 1985; Lasater, T.M., Carleton, R.A., Well, B.L., 1991). Sadler et al. (2001)

reported participation in a church cancer project three-fold greater than expected mainly because the intervention had strong endorsement from an influential entity associated with the churches. Lastly, the members themselves must see the importance and place a priority on health.

No matter how effective church-based interventions are, people must attend these interventions for them to work. Recruiting black Americans into medical studies and health interventions has historically been difficult but the recruitment of African-American men above the age of 40 has presented an exceptional challenge.

There lacks a trusting relationship between black Americans and the medical establishment (Robinson, Ashley, Haynes, 1996). Black Americans' lack of access to health care and under-representation in medical research are significant shortcomings creating a discontinuity between these two communities. As a long-term result, because African Americans have not experienced the benefits of health care, they have developed an overall mistrust towards medical professionals and the utility of health prevention as a whole. Because of this, African-Americans may be less likely to take advantage of preventative health care resources such as free prostate cancer screening or participate in medical research in which they are often under-represented.

Mann et al. (2000) studied awareness of cancer screening among African-Americans and the efficacy of church-based educational programs at three different churches in Philadelphia. Five weeks during the summer was designated to cancer awareness at each church and was advertised by posters and disseminated literature. Every Sunday during service throughout the five-week program the pastor would mention the importance of cancer screening and introduce a team of students and faculty who spoke briefly about cancer screening. Members of the respective churches, who were cancer survivors, gave testimonials at that time. Following each service members of the churches were asked to complete a short questionnaire about their cancer

screening behaviors. Only 20% of all eligible church members filled out questionnaires. A total of 437 questionnaires were completed, but males completed only 27% of that total.

To identify factors influencing black American men's participation in educational programs and free prostate cancer screening clinics, Weinrich et al. (1998a) examined the effects of different exposures to prostate cancer information (cues to action) on attendance to church-based interventions. Their hypotheses came from the Health Belief Model that states that a person will be more likely to participate in a health promoting behavior if they have had cues to action, such as attending an educational service about prostate cancer, previous participation in prostate cancer screening, or the diagnosis or death of a family member with cancer.

The sample for this study came from eleven counties in central South Carolina where there is a high concentration of rural, urban, and low-income African-Americans. First, churches were recruited for the study and then educational prostate cancer programs were performed at the participating churches. Before the programs began, an informational dinner was held at each church for the pastors and the key church contacts. On the day of the program the men who attended the meeting were given a questionnaire that measured demographics, previous exposure to prostate cancer knowledge, and previous prostate cancer screenings.

Of six hypotheses proposed, only one was significant. They found that more men attended the educational meeting at churches where a family member had been diagnosed with cancer in the last year than at churches that did not. However, this was only significant for Black churches. Other church cues to action such as having a church member die of prostate cancer or an educational meeting about prostate cancer within the last year were not significant indicators of educational meeting attendance. Also, none of the individual cues to action proposed (hearing about prostate cancer within the last year, having an examination in the last year, or having had

prostate cancer screening in their lifetime) were predictive of obtaining prostate cancer screening after the program.

Participation in these interventions can be increased several ways. Weinrich et al. (1998a) found that using larger churches with more envoys to disseminate information, networking with members in the community, and building a rapport with key church personnel are methods that help make recruitment and scheduling of interventions successful. Further, a member of the church or the community that has a concern for health and that may be influential in promotion or is part of the program staff is a major advantage. In the county with the largest program participation, one of the presenters was a registered nurse whose mother served as an administrative assistant for one of the major denominations. Similarly, the church with the largest participation had a pastor who lived next door to a registered nurse.

PROGRAM TYPE

The most favorable intervention utilizes effective teaching tools and if possible is ongoing. Program types differ depending upon the goals of the study and the time as well as resources available. The study by Boehm et al. (1995) aimed to increase prostate cancer knowledge and self-efficacy among Black men, and thus, compared to the other three articles, had more of a focus on educating rather than screening.

African-American men who had been previously diagnosed and treated for prostate cancer were trained to be lay educators. Once trained, the lay educators lead an educational and screening program after church services. The 40-minute program, which included information on the detection and treatment of prostate cancer, was highlighted by a personal testimony by the

educator about his experience with prostate cancer. The period ended with a time for questions, answers, and open discussion.

Mann et al. (2000) educated the church over a five-week period in the summer. They established committees of five church members that would represent their congregation in overseeing the projects. Posters, talks from students and faculty of the project, and testimonies from church members were given each Sunday. Health fairs were held at the end of the five-week period for each church to reemphasize the importance of cancer education. Prolonged education programs are favorable, however, finding the time, resources, and churches that are willing to commit is difficult.

Weinrich et al. (1998a) and (1998b) conducted a descriptive study of a large sample of churches and did less intensive intervention. After participants completed a 20-minute questionnaire, they watched an educational slide tape show about prostate cancer with the message "If you don't want to do it for yourself, do it for the ones you love."

It is difficult to determine what the most effective intervention is. The results of the three different programs varied---not because of the intervention type, but rather because of the sample being studied. These problems will be discussed further in the results section. None of the articles reviewed compared intervention types. Research examining the benefits of different educational programs found that peer-educator methods and interventions including phone calls to participants were more effective than standard education programs (Weinrich et al., 1998c). However, it seems evident from the current findings that the presence of an intervention alone apart from the style of the presentation is enough to cause an effect.

ON-SITE SCREENING VERSUS REFERAL TO PERSONAL PHYSICIAN

Whether to offer participants vouchers for a free private exam versus on-site mass screening raises several issues. Weinrich et al. (1998b) showed that the on-site screening was an advantage over receiving vouchers to personal physicians because it yielded the largest percentage of participation among the men who attended the intervention (87%). However, these results should be regarded cautiously because only 16 African-American men attended this intervention. Because of the small number of men who participate in these interventions, on-site screening is not a cost effective option. Further, it is difficult to ensure yearly screening compliance subsequent to the intervention. If offering onsite screening, you must be willing to return yearly. On the contrary, participants who obtain the required screening from their primary physicians are more likely to return for yearly examinations because of the patient-physician relationship that may develop. Black American men, in particular, are more likely to choose screening by a personal physician rather than on-site mass screening. However, it is difficult to determine compliance when participants seek private exams (Mann et al., 2000).

PATIENT FOLLOW-UP

To obtain conclusive evidence on the efficacy of education programs, and the benefit of on-site mass screening or physician referrals, a study must have effective follow-up. Patient follow up is often difficult because it usually requires additional contributions from the participants and substantial effort from the investigators. A major limitation has been the use of self reporting because, in a study of this nature the participants understand a “yes” response as favorable. Mann et al. (2000) initially attempted to follow up participants by sending their primary physician a self

addressed postcard that was to be returned when the parishioner obtained the recommended screening. However, only five of 420 postcards were returned. Their follow-up design was then changed to include phone calls to each parishioner that was referred for screening. It was suggested that the postcards were ineffective because the busy schedules of physicians made it difficult for them to keep record of participants and return the postcard.

Most of the focus of these studies is on recruitment and the educational program, but little attention is given to the follow-up of the participants and their screening practices after the intervention. Questions about these cancer awareness programs will remain unanswered until methods are developed and longitudinal data is collected. The need for this type of study is even more evident for the black American population where rates of prostate cancer are the highest and screening compliance is the lowest.

RESULTS

Mann et al. (2000) titled their article "Screening to the Converted" because the parishioners surveyed were well screened compared to national averages. For the men eligible, 89% reported up-to-date screening for prostate cancer. These results left very little room to show the efficacy of the intervention. However, of those participants that still required screening, 49% complied within seven months of the intervention. Reasons for not getting screened included: "doctor did not tell me I needed it", no health insurance, or "did not think it was important".

In the Boehm et al. (1998), the effectiveness of the educational intervention was also difficult to show because participants unexpectedly scored moderately high on the pre-test prostate cancer knowledge inventory. These finding differ from recent research showing African-Americans to have a very low level of actual knowledge about prostate cancer (Collins, 1997; Lewis, 2001). Despite the high mean pretest scores, a pairwise *t- test* showed significant

differences between the pre and post tests on both the knowledge inventory (pre=8.7 and post=10.1) and self-efficacy scale (pre=14.6 and = 17.0).

Weinrich et al. (1998a) A total of 497 men attended the educational meetings. Only 66% of the men had heard about prostate cancer, 18.5% had had a DRE, and 13.1% had had both a DRE and a PSA within the last year. Consistent with previous literature, there were significant race differences in the percentage of men who sought screening. Of the 497 men who attended one of the education meetings, 357 men (71%) took advantage of the free screening. Only one of the cues to action presented in this article, having a member of the congregation who was previously diagnosed with cancer, was significant predictors of meeting or screening attendance at these Southern churches; however, different results may be found within other geographic regions.

In the Weinrich et al. (1998b) study, a total of 1264 men from 155 sites completed the program and the questionnaire. Intervention participation at the churches (35%) was second only to worksites (47%). The efficacy of the intervention measured by percentage of total screenings among the five community sites, that did not offer on-site PSA screening, was highest at the churches (58%). More men participated in the educational program when they were held after a Sunday service rather than at another time during the week. Across all six types of sites, only 56% of the African-American men who participated in the intervention obtained free prostate cancer screening.

CONCLUSIONS

The message about prostate cancer awareness and screening was heard by the black American community when it was delivered through the black church. Presenting church based educational programs is an effective way to disseminate information about prostate cancer and

promote screening compliance. When planning these interventions, recruiting, program type, onsite versus private examinations, and participant follow-up must be considered.

Recruiting the churches and participants is difficult. The closed community dynamic in the black American church presents several barriers to the integration of outside health programs. However, this community dynamic is strength if understood and not abused. The pastors and leaders of the church must be supportive and deeply involved with the promotion of cancer awareness and the educational program. Having contacts within the church, establishing relationships with key leaders of the congregation, and maintaining credibility will help overcome some of the presented barriers.

The type of educational program offered during the intervention will depend on time and resources available. Prolonged programs and the participation of members from the church are favorable. Overall, the presence of an intervention seems to be beneficial.

Whether the participants are offered onsite screening or are referred to their primary physician also presents a dilemma. Resources and expected participation of the congregation must be considered before deciding what method of screening to offer. It is important to focus on increasing yearly screening and not just the initial screening of the men involved in the intervention.

Finally, follow-up is an essential part of the intervention that must be considered to establish efficacy. Follow-up should be well planned before hand, and if possible, should continue for several years after the intervention. Collecting longitudinal data will provide direction for future cancer awareness programs that currently is not available.

Some of the limitations of the articles reviewed included low participation, ineffective follow-up, and samples that were relatively well screened or knowledgeable about prostate cancer.

Despite these limitations, the articles showed that the educational programs improved prostate cancer awareness and influenced screening among black males. Using the right methods and techniques, the black church can be a very effective site for the dissemination of health information and creating a more active relationship between the black community and the health system.

References

Agho, A.O., Lewis, M.A. (2001). Correlates of actual and perceived knowledge of prostate cancer among African Americans. *Cancer Nursing*, 24(3), 165-71.

American Cancer Society (2003) Cancer Facts and figures for African Americans 2003-2004. Atlanta, GA: *American Cancer Society*; 2003

Barber, K.R., Shaw, R., Folts, M, Taylor, D.K, Taylor, Adams, Rl, Hughes, M., Scott, R., Abbott, R.R. (1998). Differenes between African American and Caucasian men participating in a community-based prostate cancer screening program. *Journal of Community Health*, 23(6), 441-51.

Boehm S., Coleman-Burns P., Schlenk E.A., Funnell M.M., Parzuchowski J., & Powell I.J., (1995). Prostate cancer in African American men: increasing knowledge and self-efficacy. *Journal of Community Health Nursing,* 12(3),161-9.

Collins, M. (1997, January/February). Increasing prostate cancer awareness in African American men. *Oncology Nursing Forum*, 24(1), 91-5.

Cort, M.A. (1996). Prostate cancer risk reduction: Attitudes of African-American males toward the digital rectal examination. *Dissertation Abstracts International: Section B: the Sciences & Engineering*. 57(1-B).

Lewis, M.A. (2001). Correlates of actual and perceived knowledge of prostate cancer among African Americans. *Cancer Nursing*, 24(3) 165-171.

Mann B.D., Sherman L., Clayton C., Johnson R.F., Keates J., Kasenge R., Streeter K., Goldberg L., & Nieman L.Z. (2000 Spring). Screening to the converted: an educational intervention in African American churches. *Journal of Cancer Education,* 15(1), 46-50.

Merrill, R.M. (2001) Demographics and health-related factors of men receiving prostate-specific antigen screening in Utah. *Preventive Medicine* 33, 646-652.

Pickle LW, Feuer EJ, Edwards BK. *US Predicted Cancer Incidence, 1999: Complete Maps by County and State From Spatial Projection Models*. NCI Cancer Surveillance Monograph Series, Number 5. Bethesda, MD: National Cancer Institute, 2003. NIH Publication No. 03-5435.

Robinson, S.B., Ashley, M., Haynes, M.A., (1996). Attitudes of African-American regarding prostate cancer clinical trials. *Journal of Community Health*. 21(2), 77-87.

Sadler, G.R, Sethee, J., Tuzzio, L., Sieben, M., Celine, M.K., & Christ, H.N. (2001). Cancer education for clergy and lay church leaders. *Journal of Cancer Education* 16, 146-149.

Sanders, E.C. (1997) New insights and interventions: churches uniting to reach the African American community with health information. *Journal of Health Care for the Poor and Underserved*. 8(3), 373-376.

Sims, M., Rainge, Y. (2002). Urban poverty and infant-health disparities among African Americans and whites in Milwaukee. *J Natl Med Assoc.* Jun;94(6):472-9.

Thompson, I.M, Resnick, M.I, & Klein, E.A. (2001). *Prostate cancer screening*. New Jersey: Humana Press.

Weinrich S.P., Holdford D., Boyd M., Creanga D., Cover K., Johnson A., Frank-Stromborg M., & Weinrich M. (1998, June*)*. Prostate cancer education in African American churches. *Public Health Nursing*, 15(3), 188-9.

Weinrich S.P., Boyd M.D., Bradford D., Mossa M.S., & Weinrich M. (1998, January/February*)*. Recruitment of African Americans into prostate cancer screening. *Cancer Practice,* 6(1), 23-30.

Weinrich S.P., Boyd, M.D., Weinrich, M., Greene, F., Reynolds, W.A., Metlin, C. (1998). Increasing prostate cancer screening in African American men with peer-educator and client-navigator interventions. *Journal of Cancer Education*. 13(4):213-9.

SAVE THIS DATE: SATURDAY- SEPTEMBER 18, OR SUNDAY- SEPTEMBER 18, 2004

Bring A Friend

What Durham Area Men Say About Prostate Cancer Screening

It gives me Peace of Mind

To protect My Health

The doctors are Urology Specialists

Convenient and on a weekend

I'm doing the right thing

It's FREE

If I had signs I'd like to know early

I'm in control of what happens to my health

I know I need to get it done every year

I want to have both the blood test and prostate exam

At my age I should get screened

Saturday, September 18, 2004 8:00-12:00 noon
Lincoln Community Health Center on Fayetteville Street

Sunday, September 19, 2004 12:00– 4:00 p.m.
Duke Medical Center—Duke South Morris Clinic Bldg.

No Appointment Needed Free Parking

Why Get Screened?
The American Cancer Society recommends that men get screened every year
Prostate cancer is the most frequently occurring cancer for men over 40 in the United States
It is the second leading cause of cancer deaths among African American men
Men of Latino heritage have the next highest rate of prostate cancer

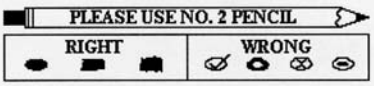
Who may come for screening?
Men 40 years of age or older

Appendix E1. 2003 - Questionnaire to determine barriers and facilitators to sustained screening

Prostate Health Survey 2003
Duke University School of Nursing

Please Mail Back
Before or By June 15 (Fathers Day)

You have been selected to receive this survey because you attended at least one free prostate cancer screening clinic at Duke University Medical Center or Lincoln Health Center between 1998 and 2001. Please return the survey by June 15 in the stamped addressed envelope. Please accept the dollar bill as a token of our appreciation for returning the survey.
Thank you,
Marva Price, RN, DrPH, Assistant Professor
Duke University School of Nursing
Box 3322
Durham, N.C. 27710
Phone: 919-684-3786 ext. 245
Please darken in the best response in each section with a No. 2 pencil. You do NOT need to write your name on the survey.



1 Year of Birth
19 ☐☐

2 What is your race?
- (A) Black (African American)
- (B) White (Caucasian)
- (C) Hispanic (Latino)
- (D) Asian
- (E) American Indian
- (F) Other (please specify) _____

3 What is your highest level of education?
- (A) Grade school
- (B) Some high school
- (C) High School graduate
- (D) Some technical school
- (E) Technical school graduate
- (F) Some 4 year college
- (G) 4 year college graduate
- (H) Some graduate school
- (I) Graduate School or Professional School

4 Are you currently...?
- (A) Retired
- (B) Disabled
- (C) Unemployed
- (D) Still working

5 Do you have a family doctor?
- (A) Yes
- (B) No

6 When was the last time you went to see a doctor for anything about your health?
- (A) This year (2003)
- (B) Last year (2002)
- (C) Longer than a year ago
- (D) Probably more than 2 years ago

7 Have you ever had somebody kin to you with prostate cancer?
- (A) Yes
- (B) No

8 I had my prostate screened last year by my doctor or healthcare provider
- (A) Yes
- (B) No

Select the MOST IMPORTANT REASONS that STOPPED OR PREVENTED you from returning for free prostate cancer screening

- ☐ I usually see my regular doctor each year for my prostate cancer screening digital rectal examination and PSA blood test
- ☐ I did NOT know that I was at the age for prostate cancer screening every year
- ☐ I thought the digital rectal examination was too embarrassing to have done
- ☐ The time of the free prostate cancer screening clinic was not convenient
- ☐ I was afraid or scared of what a prostate check up might find
- ☐ I was afraid of impotence (inability to have sex) if a problem were discovered and treatment needed
- ☐ I thought that if the doctor found prostate cancer that treatment WOULD NOT help
- ☐ I did not know that I needed to get the digital rectal exam and PSA blood test done every year
- ☐ Thinking about getting the digital rectal exam and PSA blood test caused me to be nervous or worried
- ☐ I believe its God's Will if I get prostate cancer
- ☐ I DO NOT think that the PSA blood test or the rectal exam are accurate or dependable
- ☐ I thought the digital rectal examination hurt too much to have it done
- ☐ I was found to have prostate cancer

pro2003b.fsf

Please Turn Page Over

PLEASE USE NO. 2 PENCIL

RIGHT	WRONG

MOST IMPORTANT REASONS that have STOPPED OR PREVENTED (continued)

- ☐ I was worried or scared that a prostate cancer exam and blood test might NOT be normal
- ☐ I thought that if the doctor found prostate cancer that treatment could cause more problem than NOT treating

Other significant reason that stopped you from getting free prostate cancer screening (write in)

_____

_____

Now, write in the #1 reason that kept you away from free prostate cancer screening

_____

_

Select the MOST IMPORTANT REASONS that CAUSED YOU TO GO for free prostate

- ☐ I believe that at my age I should get the digital rectal examination and PSA blood test done each year
- ☐ The time of the free prostate cancer screening clinic is convenient (weekend)
- ☐ I believe in protecting my health
- ☐ My doctor encouraged me to be screened for prostate cancer
- ☐ If I had signs of prostate cancer I wanted to find out so that treatment decisions can be made early
- ☐ My wife, family member, or someone close to me encouraged me to get screened
- ☐ I believe that I am in control of what happens to my health
- ☐ Getting prostate cancer screening gives me peace of mind

Other important reason that helped you decide to get free screening for prostate cancer (write in)

_____

Now, write in the #1 reason that caused you to get free prostate cancer screening

_____

THANK YOU FOR YOUR TIME

Please Mail Back
Before or By June 15 (Fathers Day)

Dr. Marva Price
School of Nursing
Box 3322 DUMC
Durham, NC 27710

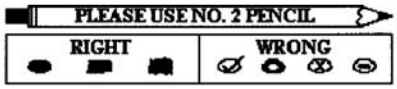
Appendix E2. 2004 - Questionnaire to determine barriers and facilitators to sustained screening

Prostate Health Survey 2004
Duke University School of Nursing

You have been selected to receive this survey because you attended at least one free prostate cancer screening clinic at Duke University Medical Center or Lincoln Health Center in 2003. Please return the survey by (date) in the stamped addressed envelope. Thank you,

Marva Price, RN, DrPH, Assistant Professor
Duke University School of Nursing
Box 3322
Durham, N.C. 27710
Phone: 919-684-3786 ext. 245

Please darken in the best response in each section with a No. 2 pencil. You do NOT need to write your name on the survey.



1 Year of Birth

19 ☐☐

2 What is your race?

- Black (African American)
- White (Caucasian)
- Hispanic (Latino)
- Asian
- American Indian
- Other (please specify) _____

3 What is your highest level of education?

- Grade school
- Some high school
- High School graduate
- Some technical school
- Technical school graduate
- Some 4 year college
- 4 year college graduate
- Some graduate school
- Graduate School or Professional School

4 Are you currently...?

- Retired
- Disabled
- Unemployed
- Still working

5 Do you have a family doctor?

- Yes
- No

6 When was the last time you went to see a doctor for anything about your health?

- This year (2004)
- Last year (2003)
- Longer than a year ago
- Probably more than 2 years ago

7 Have you ever had somebody kin to you with prostate cancer?

- Yes
- No

8 I had my prostate screened last year by my doctor or healthcare provider

- Yes
- No

Select the **MOST IMPORTANT REASONS** that **STOPPED OR PREVENTED** you from returning for free prostate cancer screening

- I usually see my regular doctor each year for my prostate cancer screening digital rectal examination and PSA blood test
- I did NOT know that I was at the age for prostate cancer screening every year
- I thought the digital rectal examination was too embarrassing to have done
- The time of the free prostate cancer screening clinic was not convenient
- I was afraid or scared of what a prostate check up might find
- I was afraid of impotence (inability to have sex) if a problem were discovered and treatment needed
- I thought that if the doctor found prostate cancer that treatment WOULD NOT help
- I did not know that I needed to get the digital rectal exam and PSA blood test done every year
- Thinking about getting the digital rectal exam and PSA blood test caused me to be nervous or worried
- I believe its God's Will if I get prostate cancer
- I DO NOT think that the PSA blood test or the rectal exam are accurate or dependable
- I thought the digital rectal examination hurt too much to have it done
- I was found to have prostate cancer

pro2004b.fsf

Please Turn Page Over

Prostate Health Survey 2004

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MOST IMPORTANT REASONS that have STOPPED OR PREVENTED (continued)

- ☐ I was worried or scared that a prostate cancer exam and blood test might NOT be normal
- ☐ I thought that if the doctor found prostate cancer that treatment could cause more problem than NOT treating

Other significant reason that stopped you from getting free prostate cancer screening (write in)

_____

_____

Now, write in the #1 reason that kept you away from free prostate cancer screening

_____

_____

Select the MOST IMPORTANT REASONS that CAUSED YOU TO GO for free prostate cancer screening

- ☐ I believe that at my age I should get the digital rectal examination and PSA blood test done each year
- ☐ The time of the free prostate cancer screening clinic is convenient (weekend)
- ☐ I believe in protecting my health
- ☐ My doctor encouraged me to be screened for prostate cancer
- ☐ If I had signs of prostate cancer I wanted to find out so that treatment decisions can be made early
- ☐ My wife, family member, or someone close to me encouraged me to get screened
- ☐ I believe that I am in control of what happens to my health
- ☐ Getting prostate cancer screening gives me peace of mind

Other important reason that helped you decide to get free screening for prostate cancer (write in)

_____

Now, write in the #1 reason that caused you to get free prostate cancer screening

_____

_____

THANK YOU FOR YOUR TIME

Appendix F. Verbal Consent for Telephone Interview

DUKE UNIVERSITY MEDICAL CENTER

SCHOOL OF NURSING

Consent For Research
VERBAL CONSENT FOR TELEPHONE INTERVIEW

Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics

Telephone Script:

Mr. _____:

I am _____, and I am calling on behalf of Duke Medical Center. I am calling you because you were one of the men who participated in the free Prostate Screening Clinic offered at Duke University and also at Lincoln Community Health Center in September of each year. I want to talk with you now if that is all right with you, and if you have the time to speak with me now.

Are you able to speak with me now?

[If his response is YES, continue with……..]

Mr. _____
You are being asked to voluntarily be part of a follow up study to determine why a man who came to the free clinic may choose not to return to the clinic for free screening the next year. You may opt not to talk with me about the screening clinic, and if you do not wish to talk with me, it will in no way cause a problem for you in getting care from Duke in the future.

[Wait for his verbal consent to continue the interview……..]

[If he replies "NO"……..thank him for his time and end the call.]

[**NOTE:** ***The exact survey questions will be asked from the mailed survey***]

Thank you, Mr. _____ for talking with me.

☐ Verbal consent ***was*** granted for the Telephone Interview
☐ Verbal consent ***was not*** granted for the Telephone Interview

Appendix G. Consent for Participation

Location:
☐ Lincoln Comm. Health Center
☐ Duke University Medical Center

Participant #_____

Last Name_____

First Name_____

DUKE UNIVERSITY MEDICAL CENTER
Department of Urology

CONSENT FOR FREE PROSTATE CANCER SCREENING

PROSTATE CANCER FREE SCREENING INFORMATION AND CONSENT FORM

Purpose: Welcome to the Durham Prostate Cancer Awareness Screening Program. The purpose of this form is to give you information about prostate cancer screening and for you to give written permission to take part in this free clinic service. If you are interested in participating in this screening, we expect it should take 1 to 2 hours of your time to complete.

This form describes the purpose, procedures, benefits, risks, discomforts and how your results will be handled. After reading this form, you should ask as many questions as needed before you give your written consent to participate in the free screening. This is a free volunteer service provided by Lincoln and Duke to men each year. No one is being paid for you to get screened. You can decide not to have the free screening done and your future treatment will not be affected at Lincoln Community Health Center or Duke University Medical Center, nor will the attitudes of the clinic staff change. This consent form might contain words that you do not understand. Please ask the volunteer staff who are helping with the screening, or the physician to explain any part that is not clear to you. You may ask advice from others here before signing this form. You will receive a copy of this form to take home to review at your leisure.

Background Information about Prostate Cancer and Prostate Cancer Screening:
The prostate gland is the male organ located at the top of the rectum. The prostate gland provides the milky fluid for the sperm. The American Cancer Society recommends that the target age for screening in White men is 50 years of age, and that for African American men or other men who are considered high risk because of prostate cancer in their family to start screening at age 40. Prostate cancer is the most frequently occurring cancer among men, and is the second leading cause of cancer deaths among African American men. Prostate cancer is 60% higher among African American men and continues to rise in the United States at a faster rate than for White men. African American men tend to have prostate cancer diagnosed in later stages. Men of Latino heritage have the next highest rate of prostate cancer. Men who have reached their 40th birthday are encouraged to take part in this free screening clinic.

Potential Benefits: In the early stage of prostate cancer, men don't have any pain or symptoms. Doctors in the United States have not been able to agree on whether medical screening of men who have no symptoms of prostate cancer reduces the probability that they will die from this condition. However, there is a large group of doctors who believe that it is important that men have a prostate cancer screening every year because most

prostate cancers that are diagnosed at an early stage are treatable. They also believe that with early detection by means of medical screening, and timely treatment, nine out of ten men will survive at least 5 years with treatment. On the other hand, if diagnosed late, only three out of ten men will survive for at least five years.

Screening Process: The prostate cancer screening is performed using a blood test called the prostate-specific antigen test (or PSA), and a rectal exam of the prostate gland known as the finger test or the digital rectal exam (or DRE). Today, we are asking you to fill out a questionnaire that will provide us with specific information about you and your health. Then, we will take 1 tablespoon of blood, more or less, from a vein in your arm in order to do the PSA blood test. Lastly, one of the doctors will do the digital rectal exam (DRE to examine your prostate. The doctor will perform this examination by inserting his gloved index finger and pressing lightly against the prostate. If the doctor can detect any swelling, lumps, or irregularity, you will be referred to your personal physician for a more complete evaluation. Furthermore, an abnormal exam result does not necessarily mean there is cancer present. We recommend that your personal doctor give you a blood test and a digital rectal exam every year, or that you return to this clinic for a free screening.

Risks and Discomforts: There is no known risk involved with participating in this medical screening. Some people experience a little pain and bruising from the puncture caused by the needle used to take the blood sample. At first, the digital rectal exam may be uncomfortable, but the discomfort passes. The potential risks associated with the digital rectal exam include initial discomfort caused by the rectal exam, or bleeding from hemorrhoids (or piles).

The results of your medical screening: You will receive a copy of the results of your digital rectal exam today. The results of your prostate-specific antigen (PSA) blood test will be sent to you at home by mail within the next few months. However, if the results of the PSA test or the DRE show any anomaly, we will suggest that you have a follow-up appointment with your doctor or a specialist in urology. If you do not have a personal doctor, we have a list of urology specialists in Durham, and you are free to take one of the lists located on the table with the pamphlets and informational brochures. The results of your PSA, DRE, and your questionnaire will be filed under lock and key with Dr. Marva Price at the Duke University School of Nursing.

Consent:

"I have read the information and have been given a chance to talk about this program and ask questions. I understand that the program is only for detecting any type of anomaly in the prostate (gland) and does not constitute a full medical examination or a complete diagnosis. I must see a doctor and undergo a medical examination and full diagnostics in order to follow up on any abnormal PSA or DRE result.

I have been informed that I can contact Marva Price, RN, DrPH (684-3786 ext. 245), or Dr. Cary Robertson (220-5251) at the Duke Medical Center to ask any questions I might have about this free medical screening program. I can also contact the Duke University

Medical Center Office of Risk Management by calling 919-684-3277 if I have any questions about my rights as a participant."

By my voluntary signature giving my consent, I understand and accept all the risks associated with the medical screening.

I hereby release the following from any responsibility, medical claims, or charges which might arise as a result of my participation, or any injury I might suffer during it: Lincoln Community Health Center and Duke University Medical Center, or the Private Diagnostic Clinics, and any other organization participating in this program, and their agents, associates, and/or employees.

Signature of the participant _____Date: _____

Permanent address*(please print)*:_____

Signature of the person obtaining the consent

_____ Date: _____

Appendix H. Prostate Health Questionnaire (Clinic Survey)

PLEASE USE NO. 2 PENCIL

RIGHT ● ■ ▮ WRONG ✓ ⊘ ⊗ ⊖

Prostate Health Survey 2004
pro91804.fsf

LABEL

First Name | **Last Name**

Address | **City** | **Zip**

Date of Birth _____/_____/_____ (Month Day Year) **AGE** _____

Home Phone# ( )_____

Work Phone # ( )_____

Med Center
① Duke
② Lincoln

1. What is your race?
① Black (African American)
② White (Caucasian)
③ Hispanic (Latino)
④ Asian
⑤ American Indian
⑥ Other (please specify)
_____

2. How did you hear about today's Prostate Screening Clinic?
① Newspaper
② Postcard or Flyer in the mail
③ Radio or TV
④ My doctor told me
⑤ Wife or somebody in my family
⑥ Church
⑦ At the clinic
⑧ Heard from a friend

3. What is your highest level of education?
① Grade school
② Some high school
③ High School graduate
④ Some technical school
⑤ Technical school graduate
⑥ Some 4 year college
⑦ 4 year college graduate
⑧ Some graduate school
⑨ Graduate School or Professional School

4. Are you currently...?
① Retired
② Disabled
③ Unemployed
④ Still working

5. Do you have a family doctor?
① Yes
② No

6. When was the last time you went to see a doctor for anything about your health?
① This year (2004)
② Last year (2003)
③ More than a year ago
④ Probably more than 2 years ago

7. Have you had a vasectomy?
① No
② Yes
If yes, what year? _____

Please Turn Page Over

Select the MOST IMPORTANT REASON that CAUSED YOU TO COME for free prostate cancer screening (check one)

① I believe that at my age I should get the digital rectal examination and PSA blood test done each year
② The time of the free prostate cancer screening clinic is convenient (weekend)
③ If I had signs of prostate cancer I wanted to find out so that treatment decisions can be made early
④ I believe that I am in control of what happens to my health
⑤ Getting prostate cancer screening gives me peace of mind
⑥ Other
_____

Read over this list... Please check which of the following you have ever heard of, and which ones you have ever tried for your prostate.

If you have not heard about any of these being related to prostate health... STOP HERE

① I have not heard of any of these

	I have heard about men using this	I have used this for my prostate
Vitamin E	①	②
Soy Protein (for example, Soy foods such as Tofu, Soy Cereals, Soy Milk and Soy Nuts, etc.)	①	②
Lycopene (in tomato sauce, paste and other tomato products)	①	②
Selenium	①	②
Saw Palmetto	①	②
Multi-vitamin for the prostate	①	②
Fish Oil	①	②

Prostate Health Survey 2004

PLEASE USE NO. 2 PENCIL

RIGHT	WRONG
● ■ ■	☑ ⊘ ☒ ⊖

	Had	Never Had	Don't know
Father's Brother had Prostate Cancer	①	②	③
Father's Father had Prostate Cancer	①	②	③
Father had Prostate Cancer	①	②	③
Brother had Prostate Cancer	①	②	③
Mother's Family had Prostate Cancer	①	②	③
Mother's Family had Breast Cancer	①	②	③
Mother had Breast Cancer	①	②	③

Over the past month, have you had any of the following problems with your urination?

	Not at all	Less than 1 in 5	Less than half the time	Half the time	More than half the time	Almost always
How often have you had a sensation of not emptying you bladder completely after you finish urinating?	①	②	③	④	⑤	⑥
How often have you had urinate again less than two hours after you finish urinating?	①	②	③	④	⑤	⑥
How often have you found that you stopped and started again several times when you urinate?	①	②	③	④	⑤	⑥
How often have you found it difficult to postpone urination?	①	②	③	④	⑤	⑥
How often have you had a weak urinary stream?	①	②	③	④	⑤	⑥

How many times do you get up to urinate from your time to bed until the time you get up in the morning?

- ○ Never
- ○ Once
- ○ Twice
- ○ Three Times
- ○ Four Times
- ○ Five or more times

If you spent the rest of your life with your urinary condition just the way it is now, how would you feel?

- ○ Delighted
- ○ Pleased
- ○ Most satisfied
- ○ Mixed about it
- ○ Mostly dissatisfied
- ○ Unhappy
- ○ Terrible

DIGITAL RECTAL EXAM (To be completed by PHYSICIAN)

Digital Rectal Exam Result:

- ○ NORMAL
- ○ Enlarged BPH
- ○ ABNORMAL - Not Suspicious
- ○ ABNORMAL - Suspicious
- ○ Patient Refused

BPH (Select One):

- ○ 1+ (15g - 20g)
- ○ 2+ (20g - 30g)
- ○ 3+ (30g - 40g)
- ○ 4+ (> 40g)

Abnormal (suspicious for Cancer)

- ○ Asymmetrical
- ○ Induration
- ○ Nodularity

Grade of Induration

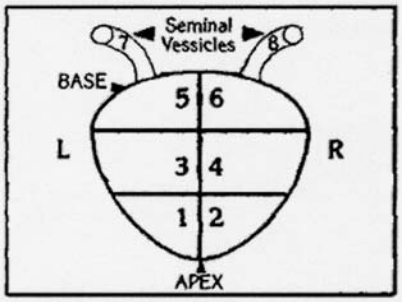
- ○ Firm (consistency of a tennis ball)
- ○ Firmer (consistency of a softball)
- ○ Hard (consistency of a marble)

Clinical Staging

- ○ T2
- ○ T3

Location of nodule(s)

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7
- ○ 8



Physicians Name _____

RECOMMENDATIONS (To be completed by PHYSICIAN)

- ○ NO ACTION NECESSARY
- ○ See a Physician - Abnormal - Suspicious DRE
- ○ See a Physician - Urinary Symptoms
- ○ BPH

THANK YOU FOR YOUR TIME

Appendix I. Draft Manuscript. Prostate Cancer Screening Do I or Don't I Participate?
Identifying Predictors of Sustained Participation in Screening Programs

Prostate Cancer Screening
Do I or Don't I Participate?

Identifying Predictors of Sustained Participation in Screening Programs

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A thesis submitted to the faculty of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Public Health in the Department of Public Health Leadership, School of Public Health

Chapel Hill
2004

Approved by:

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Abstract:

***Background*:** Prostate cancer is the most common cancer in American men and is now the second leading cause of cancer death in men, exceeded only by lung cancer. It is estimated that in 2003, approximately 220,900 new cases and 28,900 prostate cancer related deaths will occur in the United States. The natural history of prostate cancer in not very well understood, although three main risk factors have been identified; age, African American race and family history.

Survival in men with prostate cancer is related to many factors, one of the most important being extension of the tumor beyond the prostate capsule at the time of diagnosis. Therefore, a screening program for prostate cancer should ideally identify those men with more aggressive tumors that have not spread beyond the prostate capsule. One of the most controversial topics of discussion in prostate cancer has been regarding the efficacy of screening. The goal of screening is to detect disease early enough that intervention can be applied so as to reduce mortality, however this has not been proven in regards to the modalities used for prostate cancer screening.

Despite the variations in recommendations for screening, some clinicians and researchers believe there is benefit to screening at risk men, particularly African Americans and those with a family history of prostate cancer. However, many men in these high-risk categories, for a variety of reasons, do not participate in prostate cancer screening. Men who have been identified as least likely to participate in prostate cancer screenings are African American, 50-59 years of age, and those with low SES. Predictors of participation in health promoting behaviors such as cancer screening that have been documented in the literature include demographics and perceived benefits. Demographics include age, race and socioeconomic status. Perceived benefits are described as beliefs about the effectiveness of the recommended action in reducing the health threat. The purpose of this work is to identify factors associated with sustained participation in free prostate cancer screening programs among high risk men.

Methods: This is a case-control study of participants in a free prostate cancer screening program database. The men volunteered for screening at the annual free screening program at least one year during the study period from 1998-2001. Demographic data was collected from all screening participants and entered into a database. The participants were also asked to include the most important reason they chose to participate in a free prostate cancer screening program. Analysis of the demographic data includes identification of predictors of men who are non-sustainers, and how they compare to sustainers. Non-sustainers are idenitified as men who participated in screening one year, but did not participate in subsequent years.

Results: At year 2 of the study, there were 1,024 participants in the free prostate cancer screening program. Thirty-six percent were identified as sustainers. Whites were more like than African Americans to be sustainers, however this was not significant. Those with some college education or more were more likely to participate in the free screening program however when compared to those with higher levels of education, all other groups were more likely to be sustainers; though only high school graduates were significantly different. Employment status, having a regular physician or having a close acquaintance with prostate cancer does not significantly influence sustained participation in the free screening program.

Conclusions: The most important reasons reported for participation in the first years of the screening program study were convenience and cost.

Introduction:

Prostate cancer is the most common cancer in American men and is now the second leading cause of cancer death in men, exceeded only by lung cancer.[1] It is estimated that in 2003, approximately 220,900 new cases and 28,900 prostate cancer related deaths will occur in the United States. Prostate cancer comprises approximately 30% of all cancer cases diagnosed among Native Americans and Asian Americans, 37% for Caucasians and Hispanics, and half of all cancers in African Americans.[2] A man's lifetime risk of developing prostate cancer is 1 in 6.

The natural history and pathophysiology of prostate cancer is not very well understood, although three main risk factors have been identified; age, race and family history.[3] Prostate cancer is rare in men under age 50, but the incidence increases exponentially each decade thereafter. One's risk of developing prostate cancer increases with age such that men 39 years old or younger have less than a 1 in 10,000 chance, men 40-59 years old have a 1 in 55 chance and men 60-79 have a 1 in 7 chance in developing prostate cancer. In this older age category African American men have a 60% higher incidence of prostate cancer than Caucasian men.[1,2,4,5] The age-adjusted incidence is higher in African American males (243.2 per 100,000) compared with white males (144.6 per 100,000).[2] African American males have a higher mortality from prostate cancer even after adjusting for access to care factors.[5,6]

Men with a family history of prostate cancer are at increased risk compared to men without a family history of the disease.[1] Non-hereditary familial clustering is estimated to account for 15-20% of prostate cancer cases. First-degree relatives of men with prostate cancer have a threefold increased chance of developing it by age 70 compared to the average individual.[2]

Survival in men with prostate cancer is related to many factors, one of the most important being extension of the tumor beyond the prostate capsule at the time of diagnosis. The ten-year survival among men with cancer confined to the prostate is 75%, compared with 55 and 15%

respectively, among those with regional extension and distant metastases.[4] Therefore, a screening program for prostate cancer should ideally identify those men with more aggressive tumors that have not spread beyond the prostate capsule. One of the most controversial topics of discussion in prostate cancer has been regarding the efficacy of screening. The goal of screening is to detect disease early enough that intervention can be applied so as to reduce disease-related mortality,[7] however this has not yet been proven in regards to the modalities used for prostate cancer screening. Digital rectal exam (DRE) and measurement of serum prostate specific antigen (PSA) are the most widely used screening tests for prostate cancer.[4] A current review of the literature gives a very mixed picture in regards to the efficacy of prostate cancer screening, with some studies showing a beneficial impact of screening, where others do not.[4,8,9,10,11,12,13]

Although mortality rates for prostate cancer in the United States have declined by 4.5% since the introduction of PSA testing in 1994,[4] it is possible that screening programs are not solely responsible for this improvement. It is not certain whether lead time and length time biases may also account for some of these changes in survival. Alternative explanations such as improved treatment also cannot be ruled out. Other significant arguments against screening are centered on the issue of overdiagnosis; specifically the overdiagnosis of clinically insignificant prostate cancers, as prostate cancer is usually an indolent disease and older men are more likely to die from some other cause.[4] Similarly, a positive screening test may lead to large numbers of men having significant side effects, such as impotence or urinary incontinence, from therapy for prostate cancer with little or no benefit in cancer morbidity and mortality.

Given this ambiguous evidence and the significant burden of disease, current recommendations for DRE and PSA screening vary. The American Cancer Society recommends that both PSA testing and DRE be offered annually, beginning at age 50, to men who have at least

a 10-year life expectancy. Men at high risk, such as African Americans, should begin testing at age 45. Men at even higher risk, due to multiple first-degree relatives affected at an early age, could begin testing at age 40.[14] The American Urological Association recommends annual screening with PSA and digital rectal exam beginning at age 40 for African American men and those with a family history of the disease and age 50 for all other men,[15] whereas the U S Preventive Services Task Force earlier this year changed their recommendations against screening to a rating of "I" – meaning there is insufficient to recommend for or against screening.[16]

Despite the variation in recommendations for screening, several researchers and clinicians believe there is benefit to screening at risk men, particularly African Americans and those with a family history of prostate cancer. However, many men in these high-risk categories, for a variety of reasons, do not participate in prostate cancer screening. Men who have been identified as least likely to participate in prostate cancer screenings are African American, 50-59 years of age, and socioeconomically disadvantaged.[17] Attempts to explain this phenomenon have drawn upon the Health Belief Model for use as a conceptual framework. **Figure 1.** The Health Belief Model as formulated by Rosenstock is a predictor of preventive health behavior. This model is based on values and expectations. It hypothesizes that people will generally not attempt to diagnose or prevent a condition unless they possess minimal levels of relevant health motivation and knowledge, perceive themselves as potentially vulnerable and the condition as threatening, are convinced of the efficacy of intervention, and see few difficulties in undertaking the recommended action.

Predictors of participation in health promoting behaviors such as cancer screening that have been documented in the literature include demographics and perceived benefits. Demographics include age, race and socioeconomic status. Increasing age has been shown

to be a predictor of decreased participation in cancer screening. This observation is important in regards to prostate cancer, as it is known that the risk of developing prostate cancer increases with age. However Tingen et al and Weinrich et al have shown in their work that the opposite occurs with prostate cancer. Tingen has documented that men age 60 – 70 years old are more likely to participate in prostate cancer screening than men age 50 – 59 years old.[19,20,21] Race is also a predictor of participation as it has been shown that white men are more likely to participate in prostate cancer screenings. This low participation among African Americans is of concern since African Americans have the highest incidence of prostate cancer in the United States, have higher rates of metastatic disease, and have decreased survival rates.[1,2,19,20] Similarly, a 1986 report by the American Cancer Society demonstrated that socioeconomic status is an important predictor of participation, with those earning more than $50,000 per year being more like to participate in prostate cancer screening.[19,20,21]

Perceived benefits are described as beliefs about the effectiveness of the recommended action in reducing the health threat.[18] This variable has direct impact on whether or not one chooses to participate in screening. Important benefits that have been documented include “early detection”, “early treatment”, “know if I have cancer”, “know that I am well”, “so I can live longer”, “stop cancer from growing”, “learning the truth”.[20] Perceived benefits that are specific to African Americans include “prevention of illness” and “prevention of complications”.[22] Also important to consider are specific motivators of health seeking behavior. Weinrich et al identified age, family history of prostate cancer, urinary symptoms and previous history of prostate cancer screening as motivators for participation in prostate cancer screening.[21] For African Americans, Plowden et al identified resource availability and the influence of significant others such as family

and friends to be external motivators. Internal motivators were identified as perceived disability and death from a disease and unrelieved symptoms. Specifically health seeking behavior was linked to perceived outcome of a specific event, i.e. disability or death.[22] Nivens et al have also proposed that a relationship exists between overall exposure to prostate cancer information and prostate cancer screening. In this Cue to Participation in Prostate Cancer Screening Theory, Nivens suggests that men who recently have heard or read about prostate cancer screening are more likely to participate in screening.[17]

Barriers to prostate cancer screening is defined as a conflict between two opposing factors that prevents a behavior from occurring.[22] Barriers as described by Weinrich et al include embarrassment, sexual difficulty as complication of surgery, mistrust, cost, concern about abnormal test results or cancer, lack of knowledge of the health care system, not having a regular doctor, inconvenient doctors hours, lack of cultural sensitivity programs, and fatalism.[21] Plowden et al also described the following barriers, which are of particular importance among African Americans: lack of resources – money for special diets or facilities that provide primary prevention interventions, transportation, inconvenient office hours, limited knowledge of the health issues affecting African American men and community based resources available to respond to those health issues, and perceived lack of sensitivity and understanding by health care providers.[22] Myers et al also described several barriers to follow-up of abnormal prostate cancer screening results. Theses barriers included concern about physical discomfort, time involved in going for further testing, worry that further testing would cause health problems or that further testing may find prostate cancer and concern that further testing would upset family members.[6]

These studies and many others have attempted to evaluate predictors for participation in prostate cancer screening, however, most of these studies have involved asking men of their intent

to participate in screening.[19,20,21,22,23,24] Because a self-reported expression of intent to have a screening exam has not been correlated with actual behavior[18], the study presented in this article will attempt to determine the predictors, motivators and barriers of participation in men who are actively participating in screening. Men who participated in a free prostate cancer screening program where given surveys to complete while at the screening site, demographic information was collected as well as information on the reasons the men chose to participate in a free screening program.

Methods:

This is the first part of a larger case – control study whose overall objective is to determine factors associated with regular participation of prostate cancer screening among high-risk men. The purpose of this work is to identify facilitators and barriers to PSA and DRE prostate cancer screening among men in a southeastern city. Participants in the study come from a free prostate cancer screening database. The men volunteered for prostate cancer screening at an annual free screening program conducted at both a major academic health system and a community health center in one southeastern city during the time period from 1998 – 2001. Participants volunteered for screening on at least one occasion during the study period. Demographic data was collected from all screening participants at the time of screening and entered into a database. Data includes: date of birth, race, educational attainment, employment, acquaintance with someone who has prostate cancer, having a regular physician and PSA value. The participants were also asked to write in the most important reason they chose to participate in a free prostate cancer screening program. This researcher then organized these reasons into the following categories based on the 1997 pilot study and facilitators described by Weinrich et al: (A) I believe at my age I should get the digital rectal exam and PSA blood test done each year, (B) The free prostate cancer screening program is convenient, (C) I believe in protecting my health, (D) My doctor encouraged me to be screened, (E) If I had signs of prostate cancer I want to find out early so treatment decisions can be made early, (F) My wife, family member or someone else close to me encouraged me to be screened, (G) I believe that I am in control of what happens to my health, (H) Getting prostate cancer screening gives me peace of mind, and (I) Other. This information will be used to determine predictors and motivators for participation in free screening programs. Analysis of the questionnaires will focus on identifying facilitators and barriers for men who are non-sustainers,

and how they compare to sustainers. Sustainers are men who participated in the screening program two or more years. Non-sustainers are identified as men who participated in screening one year, but did not participate in subsequent years. For example, a non-sustainer is one who participated in the free screening program in 1998, but did not return for screening in 1999, 2000 or 2001.

Data was entered and validated by this researcher and analyzed by SAS 8.2. The analysis includes descriptive statistics and logistic regression. The purpose of the logistic regression model is to determine if participant demographics have a predictive effect on the primary outcome. The primary outcome examined in this study was sustained participation of an annual free prostate cancer screening for two or more years. The variables for the model are the baseline demographic variables of the participants collected at the time of initial presentation in the free screening program. There are eight variables entered in the model; age, race, education, employment, physician, family/friend (with prostate cancer), reason for participation, and PSA. All variables are categorical; physician and family/friend are dichotomized. Comparison is made of the characteristics of sustainers and non-sustainers in free prostate cancer screening programs.

Results:

There were 1024 participants in the free prostate cancer screening program between 1998 and 2001. **Table 1**. Forty four percent (n=454) of participants self-identified as Black/African American and 51% (n=524) described themselves as White. Participants were generally between the ages of 50-59, 36% (n=333), at the time of their initial screening. Most participants of the program were well educated with 55% (n=513) having some college education or more. An additional 19% (n=175) and 16% (n=152) graduated high school and attended technical school, respectively. Fifty nine percent (n=530) were employed and 36% (n=322) were retired. African Americans were of approximately the same age and educational level as whites. Of those with a high school education, 49% were African American and 47% were White. Within the 50-59 age category, 51% were White and 45% were African American. The majority of participants had a regular physician, 68% (n=626) and most did not have someone close to them with prostate cancer, 58% (n=546). Ninety-two percent (n=931) of participants had a normal PSA value (less than 4ng/ml) at the time of the initial screening. In summary the average participant was aged 50-59, employed, had some college or more of education and had a regular physician.

Thirty-six percent (n=364) were identified as sustainers of the screening program. **Table 2**. Whites were more likely than Blacks to be sustainers, however this was not significant; OR=1.079 (CI 0.831- 1.401). Hispanics and Asians (referent group) were significantly less likely to be sustainers, OR 0.344 (CI 0.150 – 0.790). In a comparison of all age groups, with those under the age of 40 used as the referent group, age was not found to significantly influence sustaining in the program. Those with a high school or technical school education were more likely to sustain than those with less than a high school education, and those with some college education or more (referent group) were less likely to sustain than those with less than a high school education. These

results, however, were not significant. Those with some college education or more were more likely to participate in the free screening program, however when compared to those with higher levels of education, all other educational groups were more likely to be sustainers; though only high school graduates were significantly different, OR 1.501 (CI 1.054 – 2.138).

In the under 40 age category participants were most likely to be Black. All of the Black participants in this age category had some college education or more. Participation among Blacks decreased with age, whereas participation increased with age among Whites. **Graph 1**. Retirees and the disabled were more likely than employed people to be sustainers, but this was not significant. Having a regular physician or having a close acquaintance with prostate cancer does not significantly impact whether one will have sustained participation in a free prostate cancer screening program. A PSA value between 4ng/ml and 10 ng/ml was shown to significantly influence sustaining in the free screening program; OR 0.526 (CI 0.291 – 0.949). A logistic regression model was done as an exploratory analysis. This was done to determine if any of the baseline demographic variables had an effect on sustaining in the free screening program for this dataset. After controlling for race and education among the educational categories, graduating from high school continued to significantly influence sustaining in the program; $p < 0.020$. At an $\propto = 0.05$ significance level, controlling for all variables, only education was found to have an a significant effect on sustaining; $p<0.0317$. The most important reasons reported for participation in the free prostate cancer screening program were convenience and cost. **Table 3**.

Discussion:

Consistent with the literature, this study found that whites, 50-59 years old, and with higher levels of education are active participants of prostate cancer screening. However, the literature to date has suggested that African Americans, 50-59, were least likely to participate in screening. This study, to the contrary, demonstrated a participation rate of 44% among Blacks compared to 51% for whites. Blacks were of approximately the same age and educational level as whites. It is difficult to pinpoint what may have attributed to the excellent rate of participation among blacks, but advertisement of the screening program may well have played a contributory role. Advertisement for this free screening was broad based and involved newspaper, radio, mailed postcards and neighborhood flyers. Other studies have shown that whites are most likely to hear of screening programs through newspapers and blacks through the radio. Many participants in our study also reported they received a postcard in the mail. Further research needs to be done to assess whether personalized recruitment (i.e. postcard in the mail) rather than mass recruitment is a motivator for participation among blacks.

The most interesting finding of this study was that participation decreases with age among blacks, but increases with age among whites. Prior research reports that increasing age is a predictor for decreased participation in cancer screening. However, Tingen et al revealed that among 60-70 year olds there was in an increase in participation as compared to 50-59 year olds.[19] Additionally, previous studies in this region have shown no significant difference in perception of risk for prostate cancer between blacks and whites, with both groups reporting their risk as the "same as the average man", and similarly black men reported that they perceived the benefit of going for screening at a level similar to that of white men.[25, 26] However, other studies have shown that blacks were significantly less likely to be knowledgeable of prostate cancer risk factors,

including race and family history.[26,27] Although no significant difference was found between education level and race, or education and age, we did not assess the prostate cancer risk factor knowledge among participants. We did note however that younger African American participants were more highly educated, specifically all of the African American men in the under 40 age group had graduate or professional education. We hypothesize that the younger black participants have an increased knowledge base of prostate cancer risk factors and perhaps represents a new cohort of African American participants. This group of men could also represent the phenomenon seen in many primary care settings of the "worried well". These are individuals who are in good health and are at low risk for certain disease entities, yet insist upon being screened or tested for these diseases. It will be of interest to see whether this trend of increased participation continues over time as this group of men ages to the appropriate screening age.

This study also found that education was significant predictor for sustained participation in the free screening program. Education often serves a proxy for certain factors related to health behaviors. In this case education may serve as a proxy for literacy and one's ability to understand the controversies surrounding prostate cancer screening such that one is able to make an informed decision. Or it may serve as a proxy for skill level and suggest employability and therefore indicate whether one is able to have health insurance and access to care. Additional research on predictors of health behaviors, especially among men, will help to determine which is at play when we say education has a significant effect on sustaining and how does one determine which is most influential.

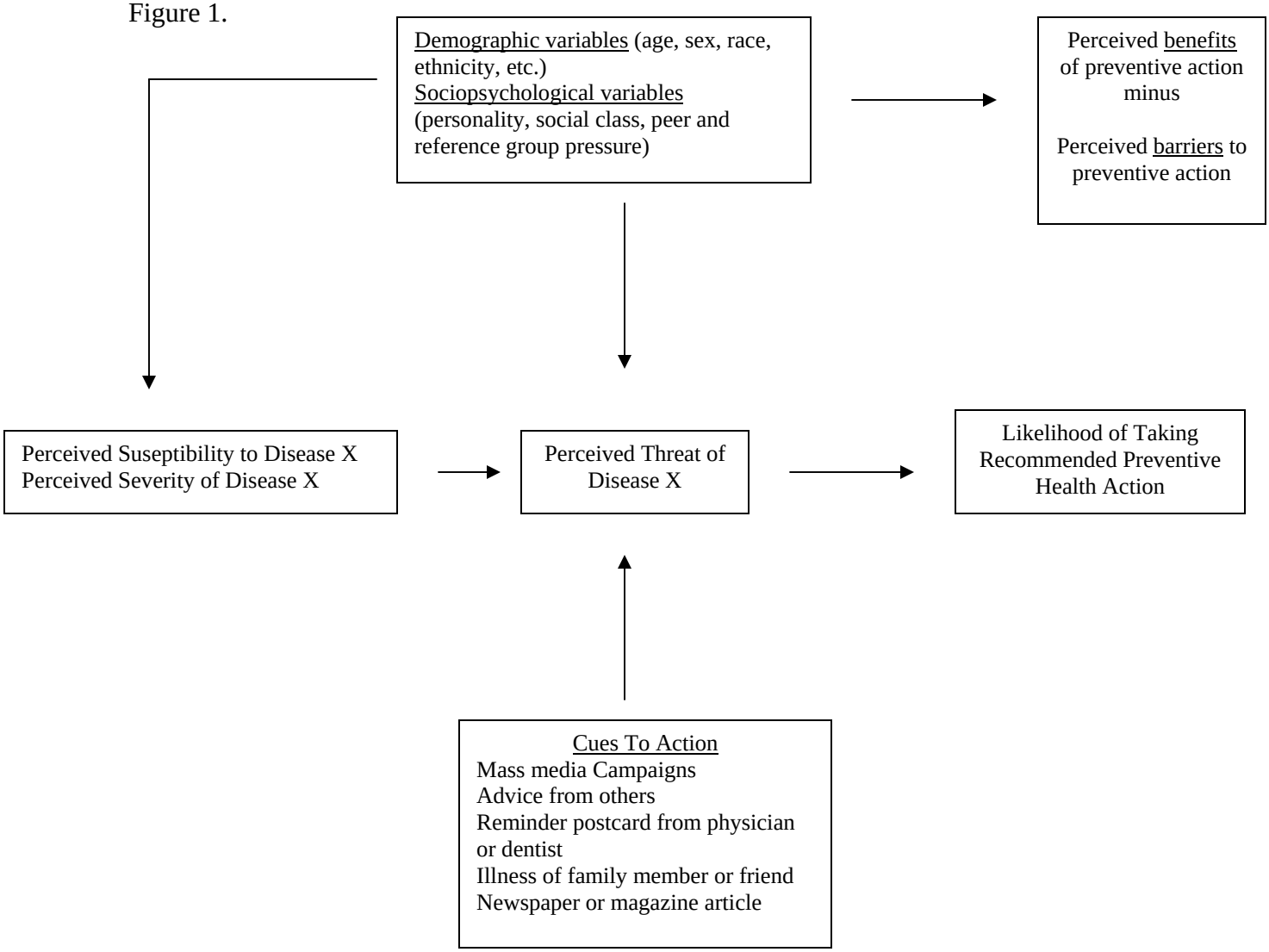
Based on education levels, employment status and number of participants reporting they have a regular physician, one would expect that the majority of these men have health insurance and therefore access to primary (preventive) health care services, yet the most common reason for

participation in the prostate cancer screening program was because it was free. In prior research, the major barrier to participation in prostate cancer screening was cost.[19] In another study of knowledge, attitude and beliefs about prostate cancer screening in African Americans, the authors found 88% if the subjects believed it would be best to participate in prostate cancer screening, with 80% agreeing to have annual screening provided it was free.[23] One hypothesis is that "free" carries additional value besides monetary. More work will have to be done to assess what connotation "free" carries in regards to the importance of health care services, but perhaps because health care services traditionally carry a cost, when it is offered to the public as free it implies some increased level of magnitude or consequence. In other words these men may think "health professionals must believe this disease is so significant that they offer a free screening to make sure I have access to it".

Also important to get more understanding of is the reason that these highly educated men who seemingly have access to the health care system would choose to participate in mass prostate cancer screening, including both a DRE and PSA, rather than having these tests done in the privacy of their physician's office. While little is known about the motivators for men in regards to participation in cancer screening, the participants in this study listed convenience high among their reason for participation. The men reported that they preferred not having to take off from work or make an appointment. There is conflicting data in the literature about the popularity of mass screenings; one study showed mass screening was most popular among whites, whereas private appointment in a prostate cancer-screening program was the preferred method for blacks. To some extent there is also a certain degree of anonymity when one participates in a mass screening program, conceivably this as well may be a motivating factor for men.

Limitations of this study include that is the study was conducted in one single geographic location. It may be difficult to generalize the results of this study to other areas in the United States. Similarly, the study involves a self-selected population of men who chose to attend prostate cancer screening events. Our results are encouraging however, because this region is known to have one of the highest prostate cancer rates in the nation and the fact that we had such a high participation rate among African Americans suggests that these men are becoming more knowledgeable about their risk factors. Also the fact that demographics were not predictors of sustained participation suggests that participation cannot be attributed to race or socioeconomic status alone. Helpful information will gathered in the remainder of this study that addresses barriers to participation among those who did not sustain in the program. Another limitation is that information obtained was by self-report and thus there is not way to validate the accuracy of the information collected. And finally, participants came to this event because it was free and convenient. As of now there is no information collected on how the men are following up if they have an abnormal result. If cost is a primary motivator of participation it is prudent that follow up care is also free and convenient.

Figure 1.



The Health Belief Model

Table 1.

Characteristics	White	African American	Other
Age			
≥80	66.67%	33.33%	0%
70-79	73.05%	25.53%	1.42%
60-69	57.08%	38.05%	4.87%
50-59	51.35%	45.05%	3.6%
40-49	61.71%	33.71%	4.57%
<40	85.71%	7.14%	7.14%
Education			
< High School	36.71%	56.96%	6.33%
High School Graduate	47.93%	49.11%	2.96%
Technical School	40.41%	56.85%	2.73%
Some college or more	59.63%	36.51%	3.86%
Employment			
Retired	59.87%	37.83%	2.3%
Disabled	38.46%	61.54%	0%
Unemployed	54.17%	33.33%	12.5%
Employed	48.34%	47.36%	4.31%
Physician			
Yes	55.72%	41.63%	2.65%
No	44.13%	49.82%	6.05%
Family/Friend			
Yes	53.91%	43.94%	2.16%
No	50.19%	45.25%	4.56%

Table 2.

	Sustainers N*=364	Non – Sustainers N*=660	OR (95 % CI)	Adjusted OR† (95% CI)
Age	n*=358	n*=574		
≥80	3.63 %	2.44 %	2.32 (0.76 – 7.08)	1.68 (0.43 – 6.64)
70-79	15.64 %	14.81 %	1.65 (0.68 – 3.99)	1.30 (0.44 – 3.83)
60-69	29.05 %	21.43 %	2.11 (0.89 – 4.99)	1.38 (0.51 – 3.75)
50-59	32.68 %	37.63 %	1.35 (0.58 – 3.17)	0.96 (0.37 – 2.50)
40-49	16.76 %	20.21 %	1.29 (0.53 – 3.11)	0.91 (0.34 – 2.44)
<40	2.23 %	3.48 %		
Race	n=357	n=573		
White	53.50 %	50.79 %	2.65 (1.12 – 6.13)	2.98 (0.98 – 8.94)*
Black	44.54 %	44.33 %	2.50 (1.06 – 5.87)	2.85 (0.95 – 8.59)*
Other	1.96 %	4.89 %		
Education	n=323	n=566		
< High School	9.60 %	8.48 %	1.32 (0.81 – 2.16)	1.08 (0.59 – 1.96)
High School Graduate	21.98 %	17.31 %	**1.49 (1.04 –2.13)**	1.75 (1.17 – 2.64)*
Technical School	18.27 %	15.55 %	1.37 (0.94 – 2.01)	1.62 (1.05 – 2.50)
Some college or more	50.15 %	58.66 %		
Employment	n=317	n=587		
Retired	39.12 %	33.73 %	1.24 (0.92 – 1.65)	1.03 (0.67 – 1.59)
Disabled	3.15 %	2.73 %	1.24 (0.55 – 2.78)	0.86 (0.35 – 2.13)
Unemployed	1.58 %	3.58 %	0.47 (0.18 – 1.27)	0.58 (0.18 – 1.82)
Employed	56.15 %	59.97 %		
Physician	n=327	n=595		
Yes	71.56 %	65.88 %	1.30 (0.97 –1.75)	1.16 (0.82 – 1.64)
No	28.44 %	34.12 %		
Family/Friend				
Yes	45.37 %	39.50 %	1.27 (0.97 – 1.67)	1.30 (0.96 – 1.78)*
No	54.63 %	60.50 %		
PSA	n=356	n=660		
>10	1.97 %	1.82 %	1.04 (0.41 – 2.67)	0.562 (0.16 – 1.95)
4-10	4.21 %	7.73 %	**0.53 (0.29 – 0.95)**	**0.340 (0.16 – 0.71)**
<4	93.82 %	90.45 %		

N differs from n at each variable because not all participants responded to that question

† Each factor is adjusted for all other factors: age, race, education, employment, physician, family/friend, reason and PSA

* $p < 0.1$

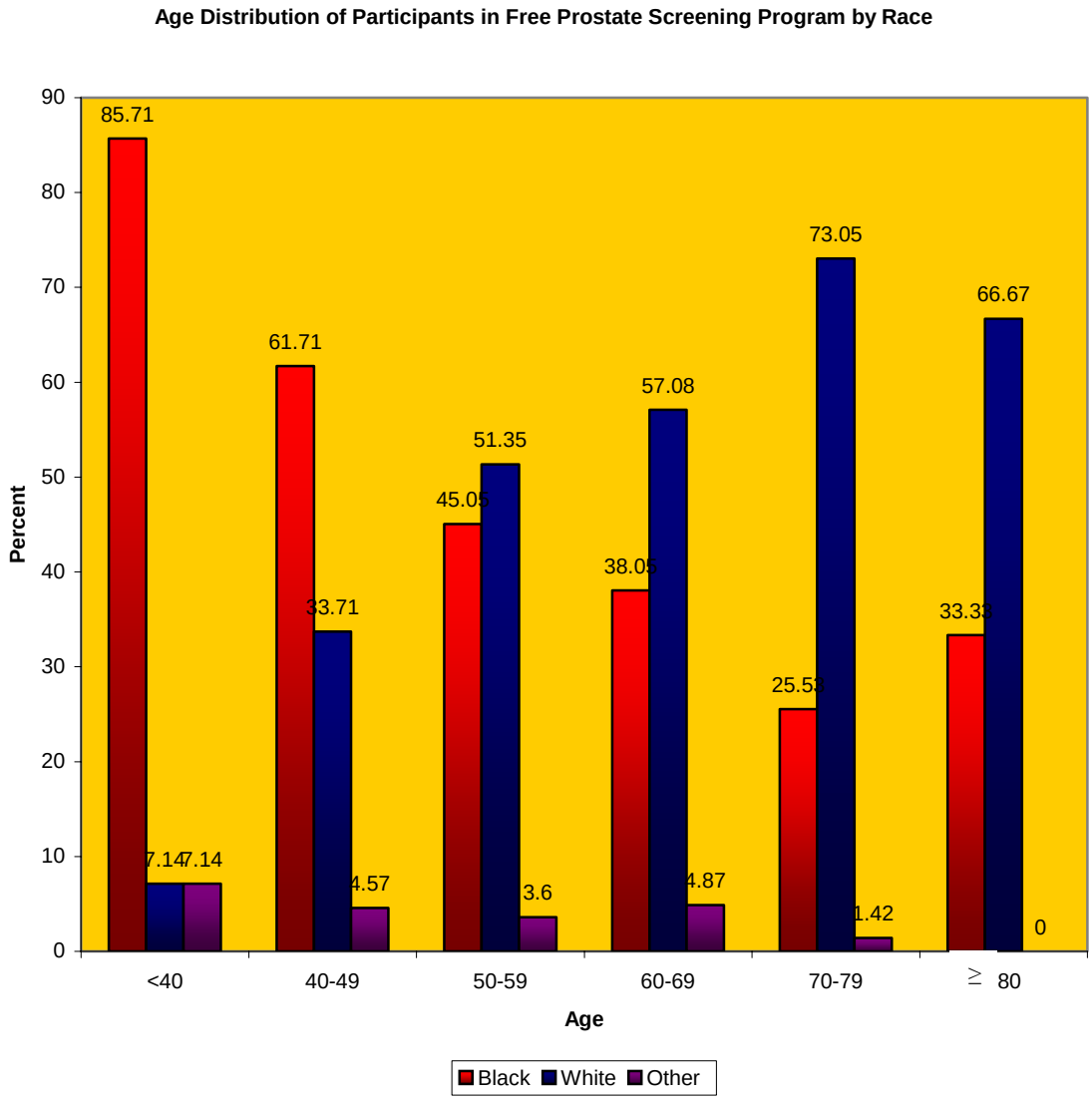
Table 3.

Other Important Reasons for Participation in the Free Prostate Cancer Screening Program

Reason for participation	Frequency
Free/Insurance/Financial	368
Participated in this screening program in the past	115
Heard about program/Received flyer in the mail	66
Time for a “check up”	53
Cancer center reputation	53
Second opinion/additional check	48
No regular doctor	31
Urological Symptoms	20
Family history/Know someone with prostate cancer	16
Regular Doctor does not recommend screening	15
To learn more information about prostate cancer	12
Regular doctor unavailable/schedule conflict	12
PSA test (blood work)	9
Never screened before	7
Doctors here are more knowledgable than personal doctor	3
Volunteer in screening program	2
Previous diagnosis of prostate disease	2
Did not know which urologist to go to	1
PSA results confusing	1
Less embarrassing	1
Free screening program will be more truthful	1
Community committed to the health of its citizens	1
More comfortable	1
Hesitant to see regular doctor	1
Enjoy fellowship with friends	1
No Urologist	1
AARP	1
Support the Cause	1

These reasons were written in by participants at the time of screening – includes reasons from all visits not just baseline.

Graph 1.


Age Distribution of Participants in Free Prostate Screening Program by Race
Percent
90
80
70
60
50
40
30
20
10
0
85.71
7.14
7.14
61.71
33.71
4.57
45.05
51.35
3.6
38.05
57.08
4.87
25.53
73.05
1.42
33.33
66.67
0
<40
40-49
50-59
60-69
70-79
≥ 80
Age
Black
White
Other

References:

1. Screening for Prostate Cancer. National Cancer Institute. http://cancer.gov Last accessed July 1, 2003

2. Sakr WA, Ward C. Epidemiology of Prostate Cancer, Prostate Cancer Screening. Edited by Thompson IM, Resnick MI, Klein EA. Humana Press. New Jersey 2001; 1-23

3. Key T. Risk Factors for Prostate Cancer. Cancer Surveys. 1995;23: 63-74

4. Brawely O, Garnick MB. Risk factors and Screening for Prostate Cancer. UpToDate11.2. http://www.utdol.com. Last accessed July 23, 2003.

5. Brawley OW, Knopf K, Merrill R. The Epidemiology of Prostate Cancer Part I: Descriptive Epidemiology. Seminars in Urological Oncology. 1998; 16: 187-192

6. Myers RE, Hyslop T, Wolf TA, Burgh D, Kunkel EJS, Oyesanmi O, Chodak GJ. African American Men and Intention to Adhere to Recommended Follow-Up for an Abnormal Prostate Cancer Early Detection Examination Result. Urology. 2000;55: 716-20

7. Prostate-Specific Antigen (PSA) Best Practice Policy. From the American Urological Association. Oncology. 2000;14

8. Friedman GD, Hiatt RA, Quesenberry CP, Selby JV. Case-control study of screening for prostatic cancer by digital rectal examinations. Lancet. 1991;337:1526-1529

9. Jacobsen SJ, et al. Screening digital rectal examination and prostate cancer mortality: A population-based case-control study. Urology. 1998;52:173-179.

10. Concato J, et al. A nested case-control study of effectiveness of screening for prostate cancer: research design. J Clin Epi. 2001;54:558-564.

11. Hankey, BF et al. Cancer surveillance series: interpreting trends in prostate cancer - part I: Evidence of the Effects of Screening in Recent Prostate Cancer Incidence, Mortality, and Survival Rates. JNCI. 1999;91:1017-24.Gann PH, Hennekens CH, Stampher MJ. A Propsective Evaluation of Prostate-Specific Antigen for Detection of Prostatic Cancer. JAMA. 1995; 273: 289-94.

12. Gann PH, Hennekens CH, Stampher MJ. A Prospective Evaluation of Prostate-Specific Antigen for Detection of Prostatic Cancer. JAMA. 1995;273: 289-94

13. Catalona WJ, Smith DS, Ratliff TL, Basler JW. Detection of organ confined prostate cancer is increased through prostate-specific antigen-base screening. JAMA. 1993;270: 948-54

14. ACS Cancer Detection Guidelines. http://www.cancer.org. Last retrieved July 23, 2003

15. Causes, Natural History & Diagnosis of Prostate Cancer. American Urological Association. http://www.urologyhealth.org. Last retrieved July 23, 2003

16. Harris R. Updated USPSTF Recommendations Table. Lecture – Prevention Strategies for Clinicians, UNC-Chapel Hill, School of Public Health. December 2002.

17. Niven AS, Herman JH, Weinrich SP, Weinrich MC. Cues to Participation in Prostate Cancer Screening: A Theory for Practice. Oncology Nursing Forum. 2001;28: 1449-56

18. Becker MH, Maiman LA. Sociobehavioral Determinants of Compliance with Health and Medical Care Recommendations. Medical Care. 1975;13: 10-24

19. Tingen MS, Weinrich SP, Boyd MD, Weinrich MC. Prostate Cancer Screening: Predictors of Participation. Journal of the American Academy of Nurse Practitioners. 1997;9: 557-67

20. Tingen MS, Weinrich SP, Heydt DD, Boyd MD, Weinrich MC. Perceived Benefits: A Predictor of Participation in Prostate Cancer Screening. Cancer Nursing. 1998;21:349-57

21. Weinrich SP, Reynolds WA, Tingen MS, Starr CR. Barriers to Prostate Cancer Screening. Cancer Nursing. 2000;23: 117-21

22. Plowden KO, Miller JL. Motivators of Health Seeking Behavior in Urban African American Men: An Exploration of Triggers and Barriers. Journal of National Black Nurses Association. 2000;11: 15-20

23. Myers RE, Wolf TA, Balshem AM, Ross EA, Chodak GW. Receptivity of African American men to prostate cancer screening. Urology 1994; 43:480-7

24. Myers RE, Wolf TA, McKee L, McGrory G, Burgh DY, Nelson G, Nelson GA. Factors Associated with Intention to Undergo Annual Prostate Cancer Screening Among African American Men in Philadelphia. Cancer 1996;78:471-9

Appendix J. Duke University Medical Center IRB Report, May 2005

DUKE UNIVERSITY HEALTH SYSTEM

INSTITUTIONAL REVIEW BOARD RESEARCH PROTOCOL

RENEWAL RESEARCH STUDY PROTOCOL SUBMISSION

Submit original + 2 copies of all materials to IRB Office

FOR IRB USE ONLY:

Assigned IRB Reviewer: _____ **IRB Registry #**

Check only one:
[ ] Approved (ER Category_____, *if applicable*) **[ ] Modifications Required**
[ ] Deferred **[ ] Disapproved**

_____ _____
IRB Chair **Date**

Study Title: **IRB#**#3497-02-2ER
Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics

Does Study Involve: Good Clinical Practice:_____ Good Manufacturing Practice:_____ Gene Transfer:__

Review Preparatory to Research or Waiver filed for this Study? *(circle one)* **Y N If yes, please attach.**

1. Principal Investigator: Marva Price, DrPH, RN MD/PhD DUHS Faculty? : _____Mail Box: 3322
Email: Marva.price@duke.edu Pager:_Phone: 684-3786 ext 245 Fax: 681-8899 Dept. & Dept: Sch. Nursing

2. Co-PI: Cary Robertson, MD MD/PhD DUHS Faculty? : Yes Mail Box: 3833
Email: rober010 Pager:_____Phone: 681-6768 Fax: 681-8074 Dept. & Division: Urology

3. Study Coordinator: Marva Price, DrPH, RN (PI) MD/PhD DUHS Faculty?: x Mail Box: 3322 Email: Marva.price@duke.edu Pager:_____Phone: 684-3786 x245 Fax: 684-8770 Dept. & Division: Sch of Nursing

4. Duke Sponsor: n/a MD/PhD DUHS Faculty? : __
Mail Box:_____
Email: _____Pager:_____Phone:_____Fax:_____Dept. & Division: _____

5. Personnel: Please use page 3 of this form to list all Key Personnel for this study.

Funding Source: U.S. Army, Department of Defense **Drug/Device Source: _____**

Protocol Source, if other than PI: _____

Date human subject contact began: 9/21/2002

IF NIH funding, is it: _____Competing Renewal* _____Non-competing renewal**

Certification Deadline to NIH: _____ ***Attach: *Complete Grant Application ** Progress Report***

Indemnification Letter on File: _____ Date: _____

[ ] Investigational drugs/devices: IND# _____ If so, Sponsor held?_____ PI held? _____

IDE # _____ CMS: A _____or B_____

Attachments – check and include all that apply:
[ ] Federal Grant/Contract Annual Progress Report (if applicable)
[x] Consent form(s)
[ ] Risk Assessment by Dept. of Pediatrics Chair – required if minors are used
[ ] Additional information PI considers important for review by IRB

Subject Populations/Procedures/Costs - check and complete all that apply:
[✓] Adults [ ] Patients [ ] Students [✓] Pregnant Women were acceptable for Focus Groups only; study is focused on males and sustaining regular prostate cancer screening
[ ] Minors [ ] Controls [ ] Employees [ ] Fetuses
[ ] Prisoners [ ] Cooperative sites [ ] Subjects incapable of giving consent
*employees/students over whom Key Personnel have a supervisory role may **not** be enrolled in the study
+controls (healthy volunteers) must be given Notice of Privacy Practices

screening participants enrolled Year 2004= 508 screening participants

[✓] Exclusion of pregnant women (Male only screening for Prostate Cancer; in Year 1 pregnant females were appropriate for the physician's or ministers focus groups for discussion of the subject matter. However, there were no pregnant subjects in any phase of the study.)

[ ] Blood: maximum amount to be drawn in any 8-week period Prostatic Specific Antigen (PSA) samples were drawn as a part of the screening program, but is not a part of this study. PI's involvement with the PSA screening program is only to store screening test results in locked files in the Duke University School of Nursing. Results, and afterwards recommendations for follow up of abnormal results are provided to participants through the Duke Univ. Comprehensive Cancer Center which facilitates the free screening.

[ ] Extra costs to patients/insurance as a result of the research (e.g., tests, hospitalization) **NONE**

[ ] Genetic testing **NONE**

[ ] Gene Transfer Therapy **NONE**

[ ] DNA Banking **NONE**

[ ] HIV testing **NONE**

[ ] Human cell banking **NONE**

[x] Subject compensation: travel/lost-income expenses **NONE**

Subcommittee Reviews – check and obtain approvals as appropriate before submission to department reviewer. Check all that apply.

Check ALL that apply. *Signature / Date*

[ ] Cancer Related – CPRC: _____

[ ] Center for Living: _____

[ ] Davis Ambulatory Surgery Center: _____

[ ] Duke Health Raleigh Hospital Comm: _____

[ ] Durham Regional Hospital Comm: _____

[ ] Gen.Clin. Res. Ctr-GCRC: _____

[ ] Hypo/Hyperbaric Unit – Safety Comm: _____

[ ] Institutional Biosafety Comm: _____

[ ] Operating Room/Anesthesia Time – Minutes required: (for research purposes only): _____

[ ] Other Hospital Comm: _____

[ ] Radiation – Radiation Safety Comm: _____

[ ] VA Hospital-VA IRB: _____

V. Certification of Principal Investigator/Faculty Sponsor: Signature certifies that all Investigators have reviewed the proposed protocol and grant, if HHS sponsored, that the documents are in agreement (or if not, an explanation is attached), and that the research will be conducted in full compliance with federal/state regulations and DUHS procedures/guidelines. It is understood that: 1) continuing IRB review is required in order to maintain the approval status and that the investigator must submit a progress report for this review; 2) all changes in the study must be approved by the IRB prior to implementation; and 3) serious, unexpected study related adverse events must be promptly reported to the IRB. . **In addition, signature below certifies that, to the best of his/her knowledge, the investigator has no conflict, financial or otherwise, in serving as Key Personnel on this study.**

Signature of Principal Investigator:

(original signature is on the form submitted to IRB) June 20, 2005
Date

Signature(s) of Co-PI/Faculty Sponsor:

(original signature is on the form submitted to IRB) June 28, 2005
Date

Certification of Departmental Review (by other than PI/Faculty Sponsor): The department IRB member's signature signifies that the protocol has been reviewed and is ready for presentation to the Department Chairperson who is responsible for scientific review of the proposed research. The Chair's signature certifies that the proposed research study has been so reviewed and is recommended for submission to the IRB.

Signature of Dept IRB Member *(clinical depts. only):* Date

Signature of Department Chairperson *(all depts.)*: Date

Annual Review Summary

1. **Provide a summary of your protocol for the upcoming year.**

2. **Answer the following questions**

a) Discuss any study related adverse events or unanticipated problems involving risks to human subjects since the last IRB review. Have these events changed your current risk/benefit assessment? None

b) Discuss any complaints about the research since the last IRB review. None

c) Discuss any substantive changes in the research since the last IRB review. **None**

d) Discuss any proposed substantive changes to the research. **None**

Do these changes require changes in the consent?

e) Discuss any new information or literature on possible risks to human subjects associated with this research topic.

There is no new information on the possible physical risks or harms, but more vigorous debate continued in 2003-2004 on to screen or not, and discussion that screening include an emphasis on informed decision making process between the man and his health care provider. In addition, in 2004 the National Cancer Institute released new findings that a significant number of men with normal PSA levels had biopsies which show varying stages of prostate cancer.

f) Discuss any preliminary results of the research, if available.

The overall objective of this study is to determine factors associated with sustaining regular participation among African American men, particularly lower-income men, in free nurse-run prostate cancer screening clinics. From those factors, a risk profile is being developed to determine which men are less likely to return for regular prostate cancer screening. The expected outcome will be to define a set of intervention strategies that can be conducted at the community level.

Across the study years 2002-2004, consistent marketing strategies have been used by the nurse-run team who organize the free screening clinics:

- Consistent marketing of the screening clinics in community newspapers, 500 Durham churches, and area ethnic radio stations.
- Letters to screening participants from two previous consecutive years to announce the screening dates and invite their continued participation.
- To increase participation by men who are uninsured or low-income in each of the study years, the nurse supervisor at Lincoln Community Health Center mailed letters to 1,000 non-white male patients 40 years and older. These were clinic patients who had not been

formally informed of the screening in previous years. Lincoln is a comprehensive health center located in a Durham low income inner city neighborhood.

- The free screening clinic has been scheduled on a consistent weekend and consistent time over the three years of the study (third weekend of September).

A continuing observation is that African American participants tend to start prostate cancer screening close to age 40, but decrease in regular screening as they age into the 60 and older range when this cancer is more prevalent. Contrastingly, White screening participants tend to increase in screening practices as they age into the 60 and older range.

For this overall study, the goal has been met for a sample size of 614 prostate cancer screening participants (307 sustainers) plus 307 non-sustainers. A one year extension was requested from the Department of Defense for continued marketing of the screening clinics in African American faith based organizations, and data analysis. During this time, comparison will be made between the rise in clinic attendance over the 2002-2004 study years and the free clinic attendance in the final study year 2005, completion of the final report, and dissemination of findings.

g) Was the study audited in the past year by internal or external auditors and were copies of the audit report sent to the IRB and to the Clinical Trials Quality Assurance (CTQA) office, School of Medicine? **No**

h) If your study was reviewed by the CTQA office since the previous IRB review, please attach a copy of the review report.

Provide a subject status report: During the Past Year

Number of subjects enrolled/participating to date: # 508

Number of subjects who refused to participate: # 1

Number of subjects terminated early: # 0

Number of subjects who completed the study: # 508

Has enrollment ended? _____ _____X No

Are any subjects still receiving study drug? _____ Yes _____ No n/a, no study drug are used

Are any subjects receiving protocol required follow-up procedures not otherwise done as standard care and which involve more than minimal risk (such as involving radiation exposure or injection of radiographic contrast material)? _____Yes x **No**

Are any subjects still active in the protocol? (Such as follow-up visit, follow-up questionnaire or follow-up phone contact).____Yes __**x**__ **No**

Cumulative Accrual by Race/Ethnic Group

	African Am.	Caucasian	Am. Indian	Hispanic	Asian	Others	Totals
2004							
Males	293	162	0	43	5	5	508
Females	n/a	n/a	n/a	n/a	n/a	n/a	
Totals	293	162	0	43	5	5	508

APPENDIX K. STUDY PERSONNEL

Marva Price, DrPH, RN, FAAN, Family Nurse Practitioner	Principal Investigator
Cary N. Robertson, MD, PhD	Co-Investigator
Seronda Jackson, MS PhD/c	Epidemiologist/Research Assistant Contract Part-time
Roxanne Smith	MSIII, Medical Student Volunteer

APPENDIX I. PI CONTACT INFORMATION

Marva M. Price, DrPH, RN, FAAN, Family Nurse Practitioner
Assistant Professor
Duke University School of Nursing
Box 3322 DUMC
Durham, NC 27710-3322

Phone: 919-684-9381 **(new phone number)**

Email: marva.price@duke.edu

Appendix L. PI Curriculum Vitae

DUKE UNIVERSITY MEDIAL CENTER
CURRICULUM VITAE

DUKE UNIVERSITY MEDICAL CENTER

CURRICULUM VITAE

for
Permanent Record
and the
Appointments and Promotions Committee

Date Prepared: October 2006

Name (complete with degrees): Marva L. Mizell Price, DrPH, MPH, FNP, FAAN

Primary academic appointment: School of Nursing

Primary academic department: School of Nursing

Secondary appointment (if any) - (department):

Social Security number: xxx-xx-2343

Present academic rank and title (if any): Assistant Professor

Date and rank of first Duke Faculty appointment: July 1, 2001 Assistant Professor

Nursing Licensure: North Carolina Registered Nurse

Date of License (Month/Day/Year): August 1972 - November 30, 2005

Specialty certification(s) and dates (Month/Day/Year):
St. Margaret's Hospital, Boston: Natural Family Planning Instructor, 1988.
American Nurses Credentialing Center (ANCC): Family Nurse Practitioner, Issued 1982; recertified March 2002 – April 2007.
North Carolina Medical Board of Nursing: Family Nurse Practitioner, Initial Approval 11/ 1974; Reapproved 11/2005-11/2006.

Date of birth: 11-25 Place: Columbia, N.C. USA

Citizen of: USA

Visa status (if applicable): N/A

Education	**Institution**	**Date (Year)**	**Degree**
College	School of Nursing N.C. Agricultural & Technical State University Greensboro, NC	1972	B.S.N.
Graduate or Professional School	School of Public Health, Department of Maternal and Child Health, University of North Carolina, Chapel Hill, NC	1974	Master of Public Health (M.P.H.) in Maternal Child Health
	School of Nursing University of North Carolina, Chapel Hill, NC	1974	Family Nurse Practitioner
	School of Nursing University of Washington, Seattle, Child Development and Mental Retardation Center	1979	Post-Masters in Developmental Pediatrics
	School of Public Health, Department of Maternal and Child Health and Program in Public Health Leadership, University of North Carolina, Chapel Hill, NC	1997	Doctor of Public Health (Dr.P.H). in Maternal and Child Health and Public Health Leadership

Scholarly Societies/Awards:

l973-present	Invited, Delta Omega Honor Society in Public Health
l974- present	Invited and Inducted, Sigma Theta Tau, Alpha Alpha Chapter, International Honor Society in Nursing; Junior and Senior Counselor, l978-l980
1993	Great 100 Award For Nursing Excellence In North Carolina for Outstanding Contributions to the Profession of Nursing
1995-1996	Albert Schweitzer Fellowship
1995-1997	Lineberger Comprehensive Cancer Center, University of North Carolina, Pre-Doctoral Fellowship
1995	American Nurses Association Ethnic Minority Fellowship (accepted as unfunded award)
1996- present	Inducted, Charter Member, Sigma Theta Tau, Mu Tau Chapter, International Honor Society in Nursing
1996	Alumni Student Award, UNC School of Public Health, awarded at the UNC School of Public Health Annual Alumni Conference
1997	Community Health Nurse of the Year, North Carolina Nurses Association
2002- present	Invited and Inducted, Fellow, American Academy of Nursing
2005	American Academy of Nurse Practitioners State Award for Excellence

Professional training and academic career:

Institution	Position/Title	Date
Post-Baccalaureate:		
Annie Penn Memorial Hospital Reidsville, NC	Registered Nurse Rotated on all services in a 120 bed community hospital (Medical/surgical, ER, Delivery Room, Pediatrics, Recovery Room)	1972-1974
Post-Master's: University of North Carolina, School of Public Health, Department of Public Health Nursing for Orange Chatham Comprehensive Health Services, Chapel Hill, NC	Family Nurse Practitioner	1974
University of North Carolina Employees Health Services, Chapel Hill, NC	Family Nurse Practitioner	1974-1976
University of North Carolina, Chapel Hill, NC Division for Disorders of Development and Learning (currently Center for Development and Learning)	Family Nurse Practitioner	1976-1982
State of North Carolina Department of Health and Human Services, Winston Salem & Raleigh, NC	Family Nurse Practitioner and Nursing Consultant, Family Planning and Women's Health, Division of Maternal Child Health	1982-1991
Duke University Medical Center, Durham, NC Department of Obstetrics and Gynecology, Division of GYN Oncology	Family Nurse Practitioner and Program Coordinator, Women's Cancer Screening Program & Cervical Dysplasia Private Clinic	1991-1994
Chatham County Health Department Pittsboro, NC	Interim Health Director Chief Executive Officer	1992
Kaiser Permanente Durham-Chapel Hill Office, NC	Family Nurse Practitioner	1994
Randolph County Health Department, Family Planning Clinic, Asheboro, NC	Family Nurse Practitioner	1996
Post-Doctorate: Duke University School of Nursing, Durham Family Nurse Practitioner Program	Clinical Assistant Professor	1996-2001
Program Director, Family Nurse Practitioner Program	Assistant Professor	May 2002-present

Publications:

1. **Refereed journals:**
    1. **Price, M.M.** (1980). Critique of the Milani-Comparetti Motor Development Screening Test. Physical And Occupational Therapy In Pediatrics, 1 (1), 59-68.
    2. Smith, E.M., Phillips, J.M., & **Price, M.M.** (2001). Screening and early detection among ethnic minority women. Seminars in Oncology Nursing, 17 (3), 159-170.
    3. Van Buren, K.G. & **Price, M.M.** (2002). Recognizing Obstructive Sleep Apnea in Children. The American Journal for Nurse Practitioners, 6(7), 9-17.
    4. Brown, S.M. & **Price, M.M.** (2003). Man with swollen lips and tongue. Clinician Reviews, 13 (4): 81-86. (*article on Ace-Inhibitors for Hypertension*)
    5. National Organization of Nurse Practitioner Faculty (NONPF) Practice Doctorate Task Force: Marion, L., Viens, D., O'Sullivan, A.L., Crabtree, K., Fontana, S. **Price, M.** (2003). The Practice Doctorate in Nursing: Future or Fringe? NONPF Practice Doctorate Task Force. Topics in Advanced Practice Nursing eJournal 3 (2), 2003. © 2003 Medscape.
    6. Marion, L., O'Sullivan, A.L. Crabtree, M. K., **Price, M.** Fontana, S. (2005). Curriculum Models For The Practice Doctorates In Nursing. Medscape. Topics in Advanced Practice Nursing eJournal 5 (1), 2005. © 2005 Medscape.

2. **Non-refereed publications:**
    1. **Price, M.M.** (1980). Why do they suck their thumbs? Baby Talk, 46 (5), 28-29.
    2. **Price, M.M.** (1982), Thumbsucking, Pediatric Currents, 31 (1).
    3. **Price, M.M**. (1985, April 7; 1980, October 5). Thumb, finger sucking common behavior in caring for kids, Chapel Hill Newspaper.
    4. **Price, M.M.** (1986). Nurse practitioners are also caught in national malpractice insurance crunch, Contraceptive Technology Update, American Health Consultants: Atlanta, 7 (11), 138-139.
    5. **Price, M.M.** (1987). OC user's recurrent candidiasis may require multiple treatment strategies, Contraceptive Technology Update, American Health Consultants: Atlanta, 8 (1), 9-11.
    6. **Price, M.M.** (1987). Nurse practitioner has complex role in managing high-cholesterol patients, Contraceptive Technology Update, American Health Consultants: Atlanta, 8 (4), 49-50.
    7. **Price, M.M.** (1987). Help long-term OC users manage healthy, gradual return to fertility, Contraceptive Technology Update, American Health Consultants: Atlanta, 8 (6), 82-83.
    8. **Price, M.M.** (1987). Try varied approaches to encourage our OC patients to stop smoking, Contraceptive Technology Update, American Health Consultants: Atlanta, 8 (8), 101-103.
    Price, M.M. (1987). North Carolina's NFP initiative is effective and well received, Contraceptive Technology Update, American Health Consultants: Atlanta, 8 (10), 133-134.
    10. **Price, M.M.** (1987). Physically, mentally disabled teens require special contraceptive care, Contraceptive Technology Update, American Health Consultants: Atlanta, 8 (12), 154-156.
    Price M.M. (1988). Find alternatives for patients using 80 to100 mcg estrogen OCs. Contraceptive Technology Update. 9 (7): 86-87.
    11. **Price, M.M.** & Price, L.N. (2002). Concerns of white and American consumers about colon cancer screening. In M. Kowalski (Ed.). Transcultural Nursing Special Interest Newsletter – Oncology Nursing Society, 12 (1), 1-3.
    12. **Price, M.M.** & Price, L.N. (2002). Concerns of white and American consumers about colon cancer screening. Prevention and Detection Special Interest Newsletter – Oncology Nursing Society, 12 (3), 1-3.
    13. **Price, M**., Flagler, S., Honig J., Huffstutler, S., Lock, S., and Stegbauer, C. (2006). Recommendations for Faculty Qualifications, Faculty Development, and Student Admissions Criteria. Retrieved October 9, 2006, from the National Organization of Nurse Practitioner Faculties Practice Doctorate Resource Center Web site: http://www.nonpf.com/NONPF2005/PracticeDoctorateResourceCenter/PDsubcommittee1.htm & http://www.nonpf.com/NONPF2005/PracticeDoctorateResourceCenter/PDResourceCenter.htm

3. **Chapters in books:**
    1. **Price, M.M.** (1980). Special Populations Sexual Abuse of the Developmentally Disabled. In D. Kay, Leadership Training Workshops. Bethesda: National Institute of Mental Health, National Center for Prevention and Control of Rape. Training Grant No. T31MH15664.

2. **Price, M.M.** (1985). Nursing Care of the Child With A Mental Deficiency. In S.R. Mott, N.S. Fazekas, & S.R. James, (Eds.), Nursing Care of Children and Families, pp. 755-783, Menlo Park, CA: Addison-Wesley Publishing Co.
3. Phillips, J. **Price, M.M.** (2002). "Breast Cancer Prevention and Detection: Past Progress and Future Directions". In K. Jennings-Dozier & S. Mahon, S. (Eds.), Cancer Prevention, Detection and Control: A Nursing Perspective. Pittsburgh, PA. Oncology Nursing Press.
4. **Price, M.M.** (2002). Health Promotion with African American women. In C.C. Clark, Health Promotion in Communities: Holistic and Wellness Approaches, pp. 355-381, New York: Springer Publishing Company.

4. Books: N/A

5. **Non-authored publications (contributions noted in author's acknowledgements)**:
   1. Public Sector NFP Program, (1988). The NFP Reader, 5 (1), Bethesda: KM Associates.
   2. Nurses, physicians prefer different postpartum prescriptions practices, Contraceptive Technology Update, (1986). American Health Consultants: Atlanta. 7 (9)
   3. - Exams Key to Detecting Cancer In Men, Duke Center for Integrative Medicine, The Herald Sun, August 7, 2003, Cancer Seminars to Open Today, The Herald Sun, January 30, 2004.

6. Other Materials:

a. Published scientific reviews (for mass distribution):

Book Reviews:

1. **Price, M.M.** (1983). Effectiveness of pediatric primary care. J. S. O'Shea & E.W. Collins, (Eds.), in Physical And Occupational Therapy in Pediatrics.
2. **Price M.M.** (1986). Diagnosis and management of the hospitalized child. H.B. Levy, S.H. Sheldon, & R.F. Sulayman (Eds.), in Physical and Occupational Therapy in Pediatrics, 6 (1), 109-110.
3. Lederer, et al. (1986). Care planning pocket guide. Ed 2. Menlo Park, CA: Addison-Wesley.
4. **Price, M.M.** (1986). Minimizing high-risk parenting. R.A. Hoekelman & P.A. Media (Eds.), in Physical and Occupational Therapy In Pediatrics, 6 (2), 125-126.
5. **Price, M.M.** (1987). Chronically ill children and their families. N. Hobbs, J.M. Perrin, & H.T. Ireys (Eds.), in Physical And Occupational Therapy In Pediatrics, 7 (3), 107-108.
6. **Price, M. M**. (1988). Children with handicaps: A medical primer. Ed 2. M.L. Batshaw & Y.M. Perret (Eds.), in Physical And Occupational Therapy in Pediatrics, 8 (1), 117-118.
7. **Price, M.M**. (1989). The invulnerable child. E.J. Anthony & B.J. Cohler (Eds.), in Physical And Occupational Therapy In Pediatrics, 9 (3), 160-161.
8. Scoggin, J. & Morgan, G. (2001). Practice gudidelines for obstetrics and gynecology. Baltimore: Lippincott, Williams & Wilkins.

b. Selected Abstracts:

1. **Price, M.M.** (1986, May). "Nurse Practitioner Prescribing Practices", Paper presented at the Annual Conference on Women's Health for Nurse Practitioners, Emory University, Atlanta
2. **Price, M.M.** (1988, May). "Helping Family Planning Patients Stop Smoking", Paper presented at the Annual Conference on Women's Health for Nurse Practitioners, Emory University, Atlanta
3. **Price, M.M.** (1989, May). "Is There an Ideal Contraceptive for the Breastfeeding Woman?" Paper presented at the Annual Perinatal Nursing Conference, Duke University Medical Center, Durham, NC
4. Price **Price, M.M.** (1993, February). "Cancer Prevention and Early Detection – Changing Lifestyles in Vulnerable Populations", Paper presented at the Health Promotion Disease Prevention Nursing Conference, Friday Conference Center, University of North Carolina School of Nursing, Chapel Hill
5. **Price, M.M**. (1994, April). "Cancers That Worry Women the Most and Screening Dilemmas", Paper presented at the Annual Spring Symposium for Primary Care Nurse Practitioners, Charlotte.
6. **Price, M.M.** (1994, October). "Developing and Using Computer Generated Slides for Oral

Presentations", Paper presented at the Dissemination Workshop during the Oncology Nurses Symposium on Cancer in African Americans, Atlanta.

7. **Price, M.M.** (1994, October 28-30). "Living with Genital Herpes: Counseling the Patient", Paper presented and Seminar Moderator for the Burroughs Wellcome Pharmaceutical Corporation Nursing Conference on Genital Herpes, Research Triangle Park, NC.
8. **Price, M.M.** (1995, April, Miami; 1995, March, Washington, DC; & 1995, February, Philadelphia). "Breast Health", Papers presented at the National Black Nurses Association Regional Conferences.
9. **Price, M.M.** (1995, August). "Gynecologic Cancers-Cervical Cancer", Paper presented at the National Black Nurses Association National Conference, Washington, DC.
10. **Price, M.M.** (1996, August). "Cervical Cancer", Paper presented at the Oncology Nursing Society Post-Conference Seminar at the Annual Meeting of the National Black Nurses Association, Chicago.
11. **Price, M.M.** (1997, May). "What Your Mother Needs to Know about Breast Health, Paper presented at the 9th Annual National Black Graduate Student Conference, Research Triangle Park, NC.
12. **Price, M.M.** (1997, August). "Cervical Cancer", Paper presented at the North Carolina Baptist Ushers Conference on Cancer Prevention, UNC Lineberger Comprehensive Cancer Center and the UNC School of Public Health Summer Public Health Conference, Raleigh, NC.
13. **Price, M.M.** (1997, August). "Intergenerational Influences on Cervical Cancer Screening", Poster Session presented at the Women's Health Issues – A Global Nursing Perspective, University of Cincinnati, St. Thomas, Virgin Islands.
14. **Price, M.M.** (1997). Generational Influences on Cervical Cancer screening and the capacity of the public health system to assure responsive Services. Dissertation Abstracts International, University of North Carolina, Chapel Hill. Microfiche No. W4.P9462. 1997.
15. **Price, M.M.** (1998, August). "Intergenerational Influences on Cervical Cancer Screening", Paper presented at the 11th Union of International Cancer Congress, Rio de Janeiro, Brazil.
16. **Price, M.M.** (1999, April). Enhancing nurse educators' knowledge base to teach their students cancer prevention and early detection in African Americans; and Using the Albert Schweitzer fellowship program to foster cross-cultural experiences for nurse practitioner students. Symposium conducted at the annual meeting of the National Organization of Nurse Practitioner Faculties (NONPF), San Francisco.
17. **Price, M.M.** (1999, November). "African American Women's Concerns about Cervical Cancer Screening", Paper presented at the American Public Health Association Annual Convention, Chicago.
18. **Price, M.M**. (2000, February). "African American Women's Concerns about Cervical Cancer Screening", Paper presented at the 7th Biennial Symposium on Minorities, The Medically Underserved & Cancer, Addressing the Unequal Burden of Cancer, Washington, DC. Published Abstract p. 41.
19. **Price, M.M.** (2000, March). "African American Women's Concerns About Cervical Cancer Screening", Paper presented at the Howard University School of Nursing Research Day, Washington, DC.
20. **Price, M.M.** (2000, April). "Creating a Faculty Research Opportunity with a Community Prostate Cancer Screening Program", Paper presented at the National Organization of Nurse Practitioner Faculties (NONPF) 26th Annual Conference, Washington, DC.
21. **Price, M.M.** (2000, August 3; July 30). "Follow-up of Men Who Participate in a Free Community Day Prostate Cancer Screening Clinic", Poster Session presented at the 11th International Conference on Cancer Nursing-Building The Future, Oslo, Norway.
22. **Price, M.M.** (2000, August). "Follow-up of Men who Participate in a Free Community Day Prostate Cancer Screening Clinic" and Generational Influences on Cervical Cancer Screening", Papers presented at the National Black Nurses Convention, Washington, DC
23. **Price, M.M.** (2000, September). "Gynecologic Cancers", Paper presented at the National Astra Zeneca Challenge Conference for Oncology Nurses, Atlanta.
24. **Price, M.M**. (2000, November). "Free Community Prostate Cancer Screening: Who Attends and Why?", Paper presented at the American Public Health Association Annual

Convention, Boston. Published Abstract – Session 4018.0 p. 202.

25. **Price, M.M.** (2001, February 16). "Free Community Prostate Cancer Screening: Who Attends and Why?" Poster Session presented at the Annual School of Public Health Minority Health Conference, University of North Carolina, Chapel Hill.
26. **Price, M.M.** (2001, September). "Free Community Prostate Cancer Screening: Who Attends and Why", Paper presented at the Biennial Conference of the Center for Disease Control and Prevention (CDC), Using Science to Build Comprehensive Cancer Programs: A 2001 Odyssey, Atlanta.
27. **Price, M.M.** (2001, October). "Lessons Learned From 58 African American Men About Prostate Cancer Screening", Paper presented at the American Public Health Association Annual Convention, Atlanta.
28. **Price, M.M**. (2002, June). "Free Community Prostate Cancer Screening in A Small Urban Community". Poster presented at the 18th Union of International Cancer Congress, Oslo, Norway.
29. **Price, M.M.** (2002, August). "Prostate Cancer Screening – Who Attends and Why". Podium presentation at the 12th International Conference on Cancer Nursing 2002: Making A Difference, London. Published Abstract, p. 28.
30. **Price, M.M**. & Robertson, C.N. (2002, September). "Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics". Poster presentation at the Ninth Annual CapCure Scientific Retreat Program, Washington, D.C.
31. **Price, M.M.,** Powe, B.D., & Underwood, S.M. (2003, March). Symposium 22 "From Research to Practice to Policy: Designing Research-Based Interventions Focused on Cancer Prevention and Control Among African-Americans". 24th Annual Meeting and Scientific Sessions for the Society of Behavioral Medicine, Salt Lake City, Utah.
32. **Price, M.M.** (2003, October). "Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics in Durham, North Carolina" Sixth Annual Sigma Theta Tau Research Day Conference: Health Disparities in Underserved Minority Populations from a Global Perspective. North Carolina A&T State University School of Nursing, Greensboro, N.C. p.13.
33. **Price, M.M.** (2003, October). "International Cancer Care Nurses Attitudes about Cervical Cancer Screening" Sixth Annual Sigma Theta Tau Research Day Conference: Health Disparities in Underserved Minority Populations from a Global Perspective. North Carolina A&T State University School of Nursing, Greensboro, N.C. p.24.
34. **Price, M.M.,** & Combs, I. (2003, November 7-9)."How to Use Innovative Health Education and Screening Programs to Promote Health in the African American Community: Durham, North Carolina and Omaha, Nebraska". Symposium conducted at the 4th Annual Institutes of Learning Conference. Oncology Nursing Society, Philadelphia, Published Abstract p. 27-31.
35. **Price, M.M**., Jackson, S.A., & Robertson, C.N. (2004, March). "Utility of Longitudinal Prostate Specific Antigen Measures in a Screening Population", Intercultural Cancer Council and Baylor College of Medicine: 9th Biennial Symposium on Minorities, The Medically Underserved & Cancer, Washington, D.C. Published Abstract p. 37.
36. **Price, M.M.** (August 2004). "International Cancer Care Nurses Attitudes About Cervical Cancer Screening". Podium presentation at the 13th International Conference on Cancer Nursing 2004: Celebrating Diversity, Sidney, Australia. Published Abstract p.
37. **Price, M.M.,** Jackson, S.A., & Robertson, C.N. (2004, November). "Utility of Longitudinal Prostate Specific Antigen Measures in a Screening Population", poster presentation at the 132nd Annual Convention of the American Public Health Association, Washington, D.C. Published Abstract p. 37.
38. **Price, M.M.** (2005, June). "Partnering Mentoring and Education in Prostate Cancer Control", Cancer Prevention and Detection Dissemination Colloquium, invited, podium presentation as outcome of the NCI and Oncology Nursing Society grant collaboration, Chicago.
38. **Price, M.M.,** Robertson, C.N. & Jackson, S.A., (2006, March). "Longitudinal Variation in Prostate-Specific Antigen Levels in a Screening Population". Poster presentation at the 70th Annual Meeting of the Southeastern Section, American Urological Association, Inc, Rio Grande, Puerto Rico, Published Abstract p. 110.

39. **Price, M.M.,** Robertson, C.N. & Jackson, S.A., (2006, March). "Longitudinal Variation in Prostate-Specific Antigen Levels in a Screening Population". Poster presentation, Duke University Medical Center Comprehensive Cancer Center Annual Meeting, Published Abstract p. 137.
40. **Price, M.M.** (2006, March). "Intergenerational Influences on Cervical Cancer Screening in African American Women in Eastern North Carolina", Poster presentation, Duke University Medical Center Comprehensive Cancer Center Annual Meeting, Published Abstract p. 138.
41. Echols, P. & **Price, M.M.** (2006, April). "The Association of Race on Prostatic Specific Antigen (PSA) Velocity and PSA Doubling Time Prior and Post Radical Prostatectomy", Podium presentation, Intercultural Cancer Council-10th Biennial Symposium on Minorities, the Medically Underserved and Cancer, Baylor College of Medicine-Houston, TX, held in Washington, D.C.

42. **Price, M.M.** & Robertson, C.N. (2006, March). "Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics". Poster presentation, Duke University Medical Center Comprehensive Cancer Center Annual Meeting, Published Abstract p. 139.
43. **Price, M.M. (**2006, June). "Prostate Cancer Screening: Coming to Terms with Controversies". Podium presentation, American Academy of Nurse Practitioners, 21st National Conference, Dallas, Texas.

Organizations and participation (regional and local):

Dates	Office held and/or Committee Assignment	Organization
2002-2003	**International:** Member	Union of International Cancer Congress Nursing Committee, Geneva, Switzerland. Congress, Oslo, Norway
2002-2004	Member	International Society of Nurses in Cancer Care (ISNCC)
1974-present	**National:** Member	American Public Health Association
1974-present	**Member**	American Nurses Association
1978-2004	Member	National Black Nurses Association (local chapter: Central Carolina Black Nurses Association)
1998-2004 Invited	Member Scientific Advisory Board Member	American Social Health Association, RTP, NC, National Cervical Cancer and Human Papilloma Virus Project
1995-present	Member	Oncology Nursing Society
January-August 2000; Invited	10 member committee from across the U.S. charged with planning a community outreach course on cancer screening and detection for 300 oncology nurses	ONS National Challenge Conference, Conference held in Atlanta, September 14-17, 2000
January – April 2002	Committee Member for participant follow up and to plan a reunion luncheon and poster session	Invitational for Best 100 Oncology Nurse Community Outreach Cancer Prevention and Early Detection Programs, held in Washington, D.C., April 20, 2002
1997-2004	Member	National Association of Nurse Practitioner Faculties (NONPF).
2006	2003-2006 Member, Clinical Doctorate Task Force, National Organization of Nurse Practitioner Faculties (NONPF) Chair, subcommittee on Faculty Qualifications, Faculty Development, and Student Admissions Criteria	
March 2005 Invited	Member, National The Susan G. Komen Breast Cancer Foundation African American Advisory Council	Meetings 2 x year

Dates	Office held and/or Committee Assignment	Organization
1994; serving 4rd term; Gubernatorial appointment	State: Member, the Public Health Commission writes the rules for all legislation passed by the North Carolina General Assembly including environmental and personal health legislation, immunization laws, restaurant and lodging grading standards, childcare facility, food establishment grading standards, HIV, smallpox, other communicable disease control.	Governor's 12 member Commission for Health Service (Public Health Commission), Raleigh. Quarterly meetings.
1995-1997; Invited	Chair, Evaluation and improvement of cancer screening services (clinical, laboratory, and radiological) for women in private and public sector clinics	North Carolina Health and Human Services, Department of Health, Breast and Cervical Cancer Assurance Committee
2000-present; Invited	Member, Board of Advisors and Fellowship selection subcommittee. The Foundation provides paid fellowships for community service learning projects conducted by medical, dental, nursing, veterinarian, and law graduate and professional students across North Carolina universities with major medical centers.	The Albert Schweitzer Foundation; fellow interview and selection annually in March; fellowship mentorship, and guidance in seminar development; meetings once a year, Duke School of Nursing student mentoring.
20012002; Invited	Member	Old North State Medical Society, Raleigh-Durham Chapter
1975-present	Member;	North Carolina Nurses Association (formerly
1985-1987	Secretary for Triangle Region;	District Eleven)
2001-2003	Commission on Standards and Practice	
January 2000	Participant, North Carolina Nurses Association Leadership Day	North Carolina Nurses Association
January 2000-2001	Participant, Awards Selection Committee for Outstanding Nursing Leadership and Service	North Carolina Nurses Association
2001-2003	Commission on Standards and Practice	North Carolina Nurses Association
February 2003; Invited	Member, Advisory Board	University of North Carolina School of Public Health, Department of Maternal and Child Health, participated in review of candidates for department chair; annual board meetings
1986-1987	Local: Member, Board of Directors	Piedmont Health Care, Inc. Federally funded primary care centers in three rural North Carolina counties
1993-1994	Chair	Chatham County Board of Health
1989-2000	Board Member	
2001-2004, term expired	Member	Copernicus Group Independent (International) Review Board, Inc. Cary, NC
2001-2004, County Commissioners Appointment	Member, official certifier for Board proceedings	Orange-Chatham-Person Developmental Disabilities and Mental Health Authority (Mental Health Board), monthly meetings
Invited 2004	Board Member and Health Committee	Carolina Meadows Retirement Community, a 700 resident continuing care retirement community, meetings four times a year

External Support Grant funding:

PI	% Effort	Purpose	Duration
PRESENT Principal Investigator, U.S. Army Department of Defense	15%	Collaboration Around Research and Education (CARE) in Prostate Cancer with Bennett College, Greensboro, N.C. to provide beginning prostate cancer education to 12 undergraduate science (biology) students over three years.	Awarded October 2006 Funding cycle 3 years
PRESENT Principal Investigator, U.S. Army Department of Defense	20%	Partnering Research Involving Mentoring and Education (PRIME) in Prostate Cancer Training Grant with North Carolina Central University to provide beginning prostate cancer education to 12 undergraduate nursing students over three years.	Awarded January 2005 Funding cycle 2005-2008
Principal Investigator, U.S. Army Department of Defense(Co-PI Mentor: Cary Robertson, M.D.,DUMC)	47%	Prostate Cancer Screening, Health Disparity Research-Prostate Scholar Award: Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics Mentor: Cary Robertson, M.D. Scientific Mentor: Paul Godley, M.D., Ph.D., Surgical Oncologist, Attend monthly seminars in Methods in Health Disparity Research, cosponsored by the Cecil Sheps Center, UNC School of Public Health; and Lineberger Comp. Cancer Center.	Funding cycle June 2002- 2006
PI, Cervical Cancer Screening, International Nurses Survey		Attitudes and Practices for Cervical Cancer Screening Among International Nurses in Cancer Care. Surveys conducted at the UICC Congress, Oslo, Norway, June-July 2002 & the International Nurses in Cancer Care, London, August-September 2002	June 2002-June 2003
PI, Department of Defense	30%	Using a Tracking System to Improve Prostate Cancer Screening Follow-up in a Small Urban	2000-2001
PI, Avon-NABCO, Inc	25%	Breast Cancer Access Grant for	October

		Nurse Practitioners in Nine-County Area in Southeastern North Carolina	1997-98
PI, (Pre-doctoral Fellow), NCI sponsored Cancer Control Education Research Program (CCEP) University of North Carolina Lineberger Comprehensive Cancer Center, Training Grant –CA64060	45%	Intergenerational Influences on Cervical Cancer Screening Dissertation Research	1995-1996 Renewed 1996-97
PI, Association of School of Public Health and The Association of Teachers of Preventive Medicine, National Center for Infectious Disease, Division of HIV/AIDS, Surveillance Branch, CDC, Atlanta		Protocol Development for Resource Assessment of HIV+ pregnant women's access and use of AZT and other social and medical resources	1994-1995

Clinical Practice (type of practice and estimate of time commitment):

Family Nurse Practitioner, Duke University Medical Center Department of Obstetrics and Gynecology, Durham, NC, for Lincoln Community Health Center Prenatal Clinic; approved to practice by the NC Board of Nursing & NC Medical Board to practice as FNP.

Community Presentations (Non-Abstract):

1. **Price, M.M.** (1991, May). "Contraception Following Pregnancy Induced Hypertension and other High Risk Medical Conditions. Paper presented at the Perinatal Nurse Conference, Durham County Hospital Corporation, Durham, NC
2. **Price, M.M.** (1996, December). "Breast Health: What African American Nurses Want to Know", Luncheon Keynote presented for the Central Carolina Black Nurses Council, Inc., Durham, NC
3. **Price, M.M.** (1997, May). "What Your Mother Needs to Know about Breast Health, Paper presented at the 9th Annual National Black Graduate Student Conference, Research Triangle Park, NC
4. **Price, M.M.** (1997, October). "Breast Health: What African American Women Need to Know", Luncheon Keynote presented for the Community Breast Cancer Awareness Seminar, Sponsor – Delta Sigma Theta Chapel Hill Alumnae Chapter, Inc, Chapel Hill, NC
5. **Price, M.M.** (2000, October). "Breast Self-Examination", Luncheon Keynote at the Community Breast Cancer Awareness Seminar, Sponsor – Delta Sigma Theta Chapel Hill Alumnae Chapter, Inc., Chapel Hill, NC
6. **Price, M.M.** (2001, March). "Nutrition and Colorectal Cancer Screening", Seminar presented for Fearrington Village Cares Group, Pittsboro, NC, Co-sponsor – Oncology Nursing Society
7. **Price, M.M.** (2001, April). "Nutrition and Colorectal Cancer Screening", Seminar presented for the Corinth AMEZ Church, Siler City, NC, Co-sponsor – Oncology Nursing Society
8. **Price, M.M.** (2003, June). "Prostate Health", Presentation for Ebenezer Baptist Church, Durham, NC
9. **Price, M.M.** (2003, March). "Prostate Health", Presentation for Peace Missionary Baptist Church, Durham, NC
10. **Price, M.M.** (2004, October). "Prostate Health", Presentation for Mt. Zoar Baptist Church, Durham, NC
11. **Price, M.M.** (2005, March). "Prostate Health", Presentation for Men's Health Group, Lincoln Community Health Center, Durham, NC
12. **Price, M.M.** (2006, March). "Prostate Health", Presentation for Men's Health Group, St. Mark AME Church, Durham, NC

Duke IRB #1 (2005 changed to IRB#6), meetings 1:00-5:00 pm the third Wednesday of each month, alternating schedule with DUSON faculty.

Acting Program Director, Oncology Nursing Curriculum, Fall 1999 to August 2000, 30 advisees.

Assistant Professor, School of Nursing, Duke University, Durham. 8/1996-.
Master of Nursing Family Nurse Practitioner Program.

Appointment, Duke University Comprehensive Cancer Center, Department of Cancer Control and Prevention, 2003

Abstracts, Appendix M.1

We have received your submission.

This is how your work will appear to the public on the World Wide Web.

Lessons Learned From 68 African American Men About

Prostate Cancer Screening and Detection

Marva M. Price, DrPH, MPH, RN, Graduate School of Nursing, Duke University, Box 3322 DUMC, Durham, NC 27710, fax: 919-681-8899

Prostate cancer among African American men continues to rise in the United States at a faster rate than for White men, and is among the highest rates in the world. The incidence of prostate cancer in African American men is estimated to be 66% higher than for white men.

In 1990, there were less that 400 cases among American men of Chinese, Japanese, and Filipino heritage. Among Korean Americans, Vietnamese, and Hawaiian ancestry, there were less than 40 cases, and 727 cases among Hispanic men. Native American, Chinese, Japanese, and Filipino men each had less than 70 deaths during the same time period.

The mortality rate for this disease is also dramatically two-fold higher among African American men versus the highest mortality rate of other racial and ethnic groups. African American men tend to have prostate cancer diagnosed in later stages. A high prostate cancer mortality rate also has been noted among other Black men of African heritage - in Brazil and Jamaica, and sub-Saharan Africa. This presentation will discuss six focus groups that were conducted with 58 African American men from a cross-section of the Durham, NC community. There were several themes, including inhibiting factors that are barriers to prostate cancer screening and encouraging factors that can facilitate early detection.

To reduce mortality rates in African American men, health care providers need to make a concerted effort to increase education about prostate cancer screening. To be effective, motivation of African American men must include healthcare providers and the consumer/community.

Abstract ID#: 29622

Password: 827595

Program Selection: Black Caucus of Health Workers

Topic Selection: The Impact Of Health Behavior On Global Health

Keywords: Cancer Screening, Minority Health

Learning Objectives: At the Conclusion of this session, participants will be able to: Discuss concerns, attitudes, and beliefs about prostate cancer and prostate cancer screening among African American men that impact health behavior. Articulate cultural factors that may affect African American men's decision-making to accept prostate cancer screening. Recognize health care and community-based strategies necessary to increase participation in prostate cancer screening.

Presentation Format: Oral Only

Disclosure: United States Department of Defense will be recognized for their funding of this project

Author

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* Division Member

Disclosure: Grant recipient

Abstracts, Appendix M.2

Author Information

1. Presentation Title:
   Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics in Durham, North Carolina

2. Presentation ✓

3. Description: This presentation describes a three-year half-million dollar community based research study funded by the U.S. Department of Defense, to increase prostate health awareness and early detection of prostate cancer. The presentation will discuss disease burden among African American men, characteristics of men who seek free mass prostate cancer screening clinics; screening guidelines and current controversies; motivators and barriers to attendance; and best practices for recruitment and retention. The setting for this study is Durham, North Carolina.

4. Educational Objectives:
   - Describe major health disparities in prostate cancer
   - Identify research methods and the components of a long-term tracking database used in the study
   - To identify facilitators and barriers to the Prostate Specific Antigen test (PSA) and the Digital Rectal Examination (DRE) for prostate cancer screening acceptance among African American men
   - Determine independent factors (barriers and facilitators) that sustain screening
   - Define strategies that encourage screening consistency among ethnically diverse men

5. Name of Primary Presenter: Marva Mizell Price, DrPH, RN, FAAN, FNP (CS)

6. Position Title: Assistant Professor and Director, Family Nurse Practitioner Program

7. Affiliation: Duke University Graduate School of Nursing

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10. No co-presenters

11. Signature_____Date _____

Abstract Worksheet

PROJECT TITLE: Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics in Durham, North Carolina

INTRODUCTION: In the United States, prostate cancer has become the second most commonly diagnosed cancer in men after skin cancer, and the second most common cause of male cancer death exceeded only by lung cancer. It is the most prevalent malignancy in older men; second cause of deaths for African American men *(*50% higher) than for White men; and the overall five-year survival rate for African American men is 81% compared to 95% for White men. The setting for this study Durham, North Carolina in two annual free mass prostate cancr screening clinics between 1998-2003.

HYPOTHESIS: African American men are less likely to participate in prostate cancer screening programs. However, with culturally sensitive outreach, an increase in participation and consistent screening patterns will be demonstrated. We will have a better understanding of the factors that influence African American men's initial choice to participate in mass screening, followed by a decision to – or not to return in the subsequent year. Another hypothesis is that we can determine which African American men need to be targeted for prostate cancer screening, and how to tailor strategies that are likely to reach them.

METHODS:
Design: Qualitative and quantitative methods are being used. Focus groups were conducted among community leaders (primarily physicians and pastors), and paper-pencil scan surveys were conducted among men who did not return to mass screening clinics in subsequent years following their first visit to the free clinics over 4 years; and likewise to men you presented themselves for free screening in each study year.

Data Analysis: Scan Tool utility software and equipment, SPSS-11® and SAS data analysis packages.

Sample: Convenience sample of approximately 2,600 men who have volunteered for free mass prostate cancer screening over a five-year period.

RESULTS: Increased community outreach can result in increased numbers of African American men volunteering for mass prostate cancer screening. However, increased efforts are necessary to reach men who are less well educated and more likely to be uninsured.

SUMMARY AND CONCLUSIONS: Mass free prostate cancer screening clinics are attended equally by White and African American men who are well-educated, of highly professional careers, a majority of the participants are 50 years of age and older and a larger proportion are over 60 years of age. Age related patterns of screening vary widely among African American versus White men. Little is known about the individual characteristics and barriers that sustain screening participation. Nurses are in an unique position to provide information and encourage prostate cancer screening.

Abstract, Appendix M.3

Longitudinal variation in prostate-specific antigen levels in a screening population

Marva M. Price, RN, DrPH, FAAN, School of Nursing, Duke University, Box 3322 DUMC, Durham, NC 27710 and Seronda A. Jackson, MS, PhD/C, School of Public Health, UNC-Chapel Hill, CB#7435, McGavran-Greenberg Hall, Chapel Hill, NC 27599-7435, 919-684-3786x245, marva.price@duke.edu.

Research has identified elevated prostate-specific antigen (PSA) levels and rates of change in PSA levels between consecutive visits as early clinical markers for prostate cancer development. Data for this study comes from a nurse-run free annual community-based prostate cancer screening program. This is the first known study evaluating rate of change in PSA measures in a community-based screening population. Participant PSA levels were observed from 1998-2003. Descriptive analyses were performed in SAS v8. Longitudinal data was collected on 1,565 predominately African-American and White volunteer screening participants. Forty-seven percent was black; forty-six percent was white. Thirty-nine percent attended at least two annual screening visits. Eleven percent had PSA levels above the cutoff for a normal PSA. Of those with abnormal PSA's 38% of African-Americans were in their 60's, while 44% of whites were in their 70's at baseline. There were 57 men with a rate of change in PSA levels between two consecutive visits greater than the suggested cutpoint of one. Eighteen participants had a running average of rate of change over three consecutive annual visits beyond the cutpoint of 0.75. Forty percent of these were between 60 and 69 at their initial visit. Sixty-one percent was white and 39% was African-American. This analysis provides methods to examine the significance of PSA findings in an assumed well population. Further, this study provides evidence for careful monitoring at normal range and sequential PSA levels. Findings from this study could lead to guidance in best practices for community-based annual prostate cancer screening programs.

Learning Objectives:

- Assess serial prostate-specific antigen (PSA) levels in an assumed well community-based population.
- Evaluate various methods of PSA testing in this volunteer population.
- Identify similarities and differences between African-American and White participants of an annual cancer screening program.

Keywords: Cancer Screening